Maryland & Pennsylvania Baseline Reliability Solution

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	487
Project title	Maryland & Pennsylvania Baseline Reliability Solution
Project description	Tie-line Impact Info: The proposal topology connects equipment owned by more than one Transmission Owner, in this case APS, BGE, MetEd, PenElec, PECO, PEPCO, and PPL (all PJM members). This Proposed Solution (PS) is an enhanced version of Project 9A, which includes the Independence Energy Connection (IEC) Project. The PS consists of: (1) IEC West, which is comprised of approximately 29-miles of new double-circuit 230kV AC overhead transmission line between the existing Potomac Edison Ringgold Substation in Washington County, Maryland to a new Rice Substation in Franklin County, Pennsylvania; (2) reconfigured IEC East, is primarily comprised of adding 230kV AC overhead transmission lines between a new Furnace Run Substation in York County, Pennsylvania, and the existing BGE Conastone (via Baltimore County) and Graceton Substations in Harford County, Maryland; and (3) other incumbent work as described in the PS. The combination of these three elements provides a comprehensive solution for the current requirements in the area. Four documents are attached to show the progress already made on this PS: - JOINT AMENDED APPLICATION OF TRANSOURCE PENNSYLVANIA LLC AND PPL ELECTRIC UTILITIES CORPORATION (Attachment 1) - MARYLAND ORDER APPROVING SETTLEMENT AND GRANTING CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AND WAIVERS (Attachment 2) - LETTER ORDER GRANTING GBE GOOD CAUSE WAIVER (Attachment 3) - MD ORDER GRANTING CPCN FOR RINGGOLD TO CATOCTIN UPGRADES (Attachment 4) The PS will create new tie-lines between PENELEC (Area 226), METED (Area 227), and APS (Area 201), and also create new tie-lines between PECO (Area 230), METED (Area 227), PPL (Area 229), and BGE (Area 232).
Email	Company confidential and proprietary information
Project in-service date	03/2027
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. Rice – Ringgold 230 kV Greenfield Transmission Line
2. Ringgold 230/138 kV Station Upgrade
3. Rice 500/230 kV Greenfield Station
4. Manor - Graceton 230 kV Upgrade
5. Conastone – Otter Creek 230 kV Transmission Line Upgrade
6. Furnace Run 500/230 kV Greenfield Station
7. Graceton Station Upgrade
8. Conastone Station Upgrade
9. Ringgold - Catoctin Line Upgrade (138 kV to 230 kV)
10. Dickerson Station Upgrade
11. Conemaugh - Hunterstown 500 kV line Tie-in
12. Peach Bottom - Three Mile Island Tie-in
13. Catoctin to Carroll Line Upgrade (138 kV to 230 kV)
14. Catoctin Station Upgrade
15. Carroll Station Upgrade
16. Glen Arm 2 – Windy Edge 1 115 kV Line Upgrade
17. Five Forks – Rock Ridge 1 115kV Line Upgrade
18. Upgrade Terminal Equipment as necessary at Ringgold, Frostown, Doubs, Old Farm, and Monocacy
19. Peach Bottom Station Upgrade
20. Upgrade Terminal Equipment as necessary at Brandon Shores and Waugh Station
21. Marlowe - Boonesboro 138 kV Series Reactor
22. Germantown Station Capacitor Upgrade
23. Garrett to Garrett Tap 115 kV Line Upgrade

24. Lewiston – Reed Tap 115 kV Terminal Equipment Upgrade
25. Dickerson - Edwards Ferry - Twin Creek – Pleasant View 230 kV Rebuild and Terminal Equipment Upgrade
26. Morgan – Cherry Run 138 kV Terminal Equipment Upgrade
27. French Mill - Hampshire 138 kV Terminal Equipment Upgrade
28. Hampshire - Gore 138 kV Terminal Equipment Upgrade
29. Gore - Stonewall 138 kV Terminal Equipment Upgrade
30. Glen Falls – Harrison Tap 138 kV Terminal Equipment Upgrade
31. Ridgely - Hampshire 138 kV Terminal Equipment Upgrade
32. Frostburg – Ridgley 138 kV Terminal Equipment Upgrade
33. Meadowbrook - Bartonsville 138 kV Terminal Equipment Upgrade
34. Dans Mountain - Ridgely 138 kV Terminal Equipment Upgrade
35. Mt Zion – West Valley 138 kV Terminal Equipment Upgrade
36. West Valley – Cross School 138 kV Terminal Equipment Upgrade
37. Cross School – Black Oak 138 kV Terminal Equipment Upgrade
38. Parr Run - Junction 138 kV Terminal Equipment Upgrade
39. Riverton - Bethel 138 kV Terminal Equipment Upgrade

Greenfield Transmission Line Component

Component title	Rice – Ringgold 230 kV Greenfield Transmission Line
Project description	Company confidential and proprietary information
Point A	Rice Station
Point B	Ringgold Station
Point C	

	Normal ratings	**Emergency ratings**
Summer (MVA)	1827.000000	2075.000000
Winter (MVA)	2246.000000	2485.000000

Conductor size and type	2-bundled 795 ACSS @482 degree F, six-wired
Nominal voltage	AC
Nominal voltage	230
Line construction type	Overhead
General route description	The Rice-Ringgold 230kV line will connect the existing Ringgold Substation to a new 500/230kV Rice Station. The line will be approximately 29-miles long, constructed with two-bundle 795 ACSS in a double circuit configuration but operated as a single circuit. The Ringgold Station will be expanded and upgraded to accommodate the new 230kV circuit. The new 230kV line will exit the expanded Ringgold Substation from the southeast and turn north into Pennsylvania and continue until it enters the Rice Substation from the south.
Terrain description	The topography for the Rice-Ringgold 230kV line is mostly flat. Land use in the area encompasses mostly cultivated crops, low- to medium-density developed areas, and crosses state and county highways and existing utilities.
Right-of-way width by segment	The Rice-Ringgold 230kV Route is the result of a robust siting and outreach process which included input from landowners, local officials, and key stakeholders on a multitude of study segments. The proposed route will be 130 feet in width, parallels existing rights-of-way including interstates, roads, railroads, and existing transmission lines for 42% of its length, and best minimizes potential impacts to the natural and human environments. The extensive Siting Study is available for review under PA PUC docket A-2017-2640200. In addition, the Proposing Entity has been able to obtain 70% of the required ROW, via option agreements or easements, for the Rice-Ringgold 230kV line route.
Electrical transmission infrastructure crossings	- Antrim-West Waynesboro 69 kV line, - Fayetteville - Allegheny 69 kV line, - Fayetteville - West Waynesboro 138 kV line, - Reid-Ringgold 138 kV line, - Reid-West Waynesboro 69 kV line, - Ringgold - East Hagerstown 138 kV line, - Ringgold - West Waynesboro 138 kV line, - West Waynesboro - East Waynesboro 138 kV line, - Grand Point - Allegheny Energy 138 kV line
Civil infrastructure/major waterway facility crossing plan	The Rice-Ringgold 230kV line crosses railroads, several streams, but no major water facilities. Therefore, the Project Solution will not involve any civil infrastructure/major waterway facility crossings.

Environmental impacts	Rice-Ringgold 230kV line has undergone a robust siting analysis, as well as the required environmental and cultural resource surveys. Due to the advanced phases of the Proposed Solution, environmental impacts, mitigation, and permitting requirements are well documented and underway. The Pennsylvania Department of Conservation and Natural Resources issued a concurrence for the Rice-Ringgold 230kV line, stating that the lance-leaf buckthorn (a sensitive species) would not be impacted by the project based on surveys conducted along the route. In addition, the Pennsylvania Historical and Museum Commission cleared the Proposed Solution for both archaeological and cultural resources with an MOU that was executed with the Proposing Entity. A significant portion of wetland mitigation has already been secured. Extensive coordination with the Maryland Power Plant Research Program (PPRP) has also occurred with the remaining conditions for the Proposed Solution documented in the Order (see Attachment 1). As a result of these activities being completed, the Proposing Entity has a significant advantage to implement the project in an expedited timeframe.
Tower characteristics	The project will use steel, monopole structures with foundations. The use of steel monopoles was determined during the siting of the Proposed Solution due to significant landowner opposition to lattice towers, particularly in agricultural areas.
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	$64,554,090.00
Component cost (in-service year)	$72,656,197.00

Substation Upgrade Component

Component title	Ringgold 230/138 kV Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Ringgold Station
Substation zone	APS
Substation upgrade scope	The Ringgold 230 Station will be reconfigured to a Double-Breaker Double-bus scheme. The two Ringgold 230/138 kV transformers will be replaced. Two Ringgold 138 kV breakers will be replaced for short circuit duty. To accommodate the new line, the 230 kV substation will need to be expanded 84 feet by 190 feet on the southeast side of the station, requiring site grading and grubbing, a new drive gate and fence expansion.

Transformer Information

	Name		**Capacity (MVA)**
Transformer	Transformer 1		339
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	230	138	
	Name		**Capacity (MVA)**
Transformer	Transformer 2		339
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	230	138	

New equipment description	- Replace the (2) Ringgold 230/138 kV transformers – Replace (2) Ringgold 138 kV breakers for short circuit duty - Reconfigure the Ringgold 230 Station to Double-Breaker Double-Bus scheme - Install (2) new 230 kV positions for 230/138 kV transformers - Install new 230 KV position for Catoctin 230 kV line

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. This proposal assumes that all necessary outages will be available to execute this work.
Real-estate description	This proposal assumes that all necessary outages will be available to execute this work. The proposal also assumes that there is land available to accommodate the expansion of the 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	$14,800,000.00
Component cost (in-service year)	$16,657,530.00

Greenfield Substation Component

Component title	Rice 500/230 kV Greenfield Station
Project description	Company confidential and proprietary information
Substation name	Rice Station

Substation description	The new Rice Substation will be built near the intersection of Olde Scotland Road and Two Turn Road (at 39°59'52.70"N, 77°33'7.16"W), in close proximity to the existing Hunterstown-Conemaugh 500kV line, and will serve as a termination point for the proposed 230kV line from Ringgold Station. The Proposing Entity chose the proposed site to optimize cut-in of the existing 500kV transmission lines and length of the respective taps. The Rice Station will be laid out as a three-breaker ring bus on the 500kV side and a single-breaker protecting a single line exiting on the 230kV side. This arrangement accommodates (2) 500kV line terminals, (6) single-phase 333 MVA 500kV/230kV/13.8kV transformers, and (1) 230kV line terminal. The Rice station is approximately 790 feet by 480 feet on approximately 37 acres of land, which the proposing entity has under option for purchase.
Nominal voltage	AC
Nominal voltage	500/230

Transformer Information

	Name		Capacity (MVA)
Transformer	Transformer Bank 1		1000
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	13.5

	Name		Capacity (MVA)
Transformer	Transformer Bank 2		1000
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	13.5

Major equipment description	Three-breaker ring at 500kV (4000 Amp) with (2) 500/230kV Transformers, configured to operate together. Single 230kV breaker (5000 Amp) to serve as low side transformer protection and line protection for the new 230kV line.

	Normal ratings	Emergency ratings
Summer (MVA)	999.000000	1248.000000

Winter (MVA)	1248.000000	1348.000000
Environmental assessment	Several potential substation sites were vetted during the siting process with the current Rice Station site selected as the preferred site. The existing property is currently used as an agricultural field. The Proposing Entity has completed the required environmental and cultural resource surveys on the property and no concerns were identified.	
Outreach plan	The Proposing Entity has already completed a robust outreach program during the siting phase of the Proposed Solution. As the Proposed Solution continues to move forward, representatives will continue to be available throughout construction to answer questions from landowners.	
Land acquisition plan	The proposed site for the Rice Station has already been obtained by the Proposing Entity. No further acquisitions are required for the substation site.	
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	$31,615,301.00
Component cost (in-service year)	$35,583,301.00

Transmission Line Upgrade Component

Component title	Manor - Graceton 230 kV Upgrade

Project description	Company confidential and proprietary information
Impacted transmission line	Manor-Graceton 230 kV
Point A	Manor Station
Point B	Furnace Run Station
Point C	Graceton Station
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	230
Conductor size and type	Lapwing 1590 ASCR 45/7 5 stranding
Hardware plan description	Manor-Graceton 230kV line is a single circuit between the PPL Manor substation in Pennsylvania and the BGE Graceton substation in Maryland. Ownership of the line transitions at the state border. In Pennsylvania, PPL rebuilt the line in the past decade as weathered steel monopole structures. The monopoles are capable of holding six (6) arms for double circuit usage but currently only have three (3) arms on the structures with the single 230kV circuit. In Maryland, the BGE owned portion of the line remains on lattice steel structures terminating into Graceton.
Tower line characteristics	The existing line currently has lattice structures and monopole structures.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	647.000000	801.000000
Winter (MVA)	746.000000	903.000000
Conductor size and type	1590 kcmil ACSR Falcon	

Shield wire size and type	Overhead shield wires will be 0.752 OPGW fiber optic cables.
Rebuild line length	11.0 miles
Rebuild portion description	The Manor-Graceton 230kV line involves adding a second circuit to the existing transmission line owned by PPL and BGE. For the BGE owned portion of Manor-Graceton 230kV line in Maryland, eight (8) existing lattice structures would be replaced with double circuit steel monopoles and additional conductor will be added to the line to create Furnace Run-Graceton #1 and #2. At the state line, where the line ownership changes to PPL, there are existing double circuit capable steel monopole structures. Arms will be added to the structures to accommodate a second circuit and conductor will be added to this portion of the line up to a point where it intersects an existing, de-energized, 69kV corridor. At this point, the two circuits originating from Graceton, and a third circuit originating from Manor will turn west towards Furnace Run following and expanding PPL's existing 69kV corridor.
Right of way	All of the necessary rights-of-way have been acquired in both Pennsylvania and Maryland for the Furnace Run- Graceton double circuit transmission line.
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	$21,800,000.00
Component cost (in-service year)	$24,536,092.00

Transmission Line Upgrade Component

Component title	Conastone – Otter Creek 230 kV Transmission Line Upgrade
Project description	Company confidential and proprietary information
Impacted transmission line	Conastone-Otter Creek
Point A	Conastone Station
Point B	Furnace Run Station
Point C	Otter Creek Station
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	230
Conductor size and type	1590 kcmil ACSR “Falcon”
Hardware plan description	Conastone-Otter Creek 230kV line is a single circuit between the PPL Otter Creek substation in Pennsylvania and the BGE Conastone substation in Maryland. Ownership of the line transitions at the state border. PPL and BGE rebuilt the line in the past decade as weathered steel monopole structures. The monopoles are capable of holding six (6) arms for double circuit usage but currently only have three (3) arms on the structures with the single 230kV circuit. In Maryland, the BGE owned portion of the line remains on lattice steel structures terminating into Conastone.
Tower line characteristics	The existing line currently has monopole and lattice structures.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	647.000000	801.000000

Winter (MVA)	746.000000	903.000000
Conductor size and type	1590 kcmil ACSR 54/19 “Falcon”	
Shield wire size and type	Overhead shield wires will be 0.752 OPGW fiber optic cables.	
Rebuild line length	16.0 miles	
Rebuild portion description	For the BGE owned portion of Otter Creek-Conastone 230kV line in Maryland, additional conductor would be added to the line to create Furnace Run-Conastone #1 and #2. At the state line, where the line ownership changes to PPL, there are existing double circuit capable steel monopole structures. Arms would be added to the structures to accommodate a second circuit and conductor would be added to this portion of the line up to a point where it intersects an existing, de-energized, 69kV corridor. At this point, the two circuits originating from Conastone, and a third circuit originating from Otter Creek would turn east towards Furnace Run following and expanding PPL's existing 69kV corridor, terminating in the 230kV AIS yard.	
Right of way	All of the necessary rights-of-way have been acquired in both Pennsylvania and Maryland for the Furnace Run-Conastone double circuit transmission line.	
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	$29,000,000.00	

Component cost (in-service year)	$32,639,755.00

Greenfield Substation Component

Component title	Furnace Run 500/230 kV Greenfield Station
Project description	Company confidential and proprietary information
Substation name	Furnace Run
Substation description	The new Furnace Run Substation will be built near the intersection of Delta Rd and Chanceford Rd (at 39°51'8.91"N, 76°25'23.57"W), in close proximity to the existing Three Mile Island-Peach Bottom 500kV line and directly adjacent to the 69kV corridor that will be used for the six (6) 230kV circuits terminating into Furnace Run. The Proposing Entity chose the proposed site to optimize the cut-in of the existing 500kV transmission lines and length of the respective taps. The Furnace Run Substation will be laid out as an eight (8) breaker 500kV GIS in a breaker-and-a-half configuration, and a fourteen (14) breaker 230kV AIS in a breaker-and-a-half configuration. The substation will have three (3) 500/230kV transformer banks, each bank having three (3) 333MVA 500/230kV single-phase transformer units. The proposed station is approximately 890 feet by 480 feet on approximately 42 acres of land, which the Proposing Entity has under option for purchase.
Nominal voltage	AC
Nominal voltage	500/230

Transformer Information

	Name		**Capacity (MVA)**
Transformer	Transformer Bank 1		1000
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	13.5
	Name		**Capacity (MVA)**
Transformer	Transformer Bank 2		1000
	High Side	**Low Side**	**Tertiary**

Voltage (kV)	500	230	13.5

	Name	**Capacity (MVA)**
Transformer	Transformer Bank 3	1000

	High Side	**Low Side**	**Tertiary**
Voltage (kV)	500	230	13.5

Major equipment description	- (8) 4000+ Amp 500 kV GIS Circuit Breakers in a breaker-and-a-half scheme - (3) 500/230 kV Transformer Banks - Name Plate Ratings for each single-phase transformer is 333 MVA - (14) 4000 Amp 230 kV Circuit Breakers in a breaker-and-a-half scheme

	Normal ratings	**Emergency ratings**
Summer (MVA)	999.000000	1248.000000
Winter (MVA)	1248.000000	1348.000000

Environmental assessment	Several potential substation sites were vetted during the siting process with the current Furnace Run Station site selected as the preferred site. The site is partly agricultural use and partly forested. The Proposing Entity has completed the required environmental and cultural resource surveys on the property and no concerns were identified.
Outreach plan	The Proposed Entity has already completed a robust outreach effort during the siting phase of the Proposed Solution. As the Proposed Solution continues to move forward, representatives will continue to be available throughout construction to answer questions from landowners.
Land acquisition plan	All necessary land rights for the Furnace Run station have been acquired. The Proposing Entity's ownership of the land required for the Furnace Run substation site is a significant benefit, given that alternative suitable substation sites in the area are very limited. The advanced engineering of the substation provides a major benefit by combining GIS and AIS technologies.
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	$75,822,723.00
Component cost (in-service year)	$85,339,142.00

Substation Upgrade Component

Component title	Graceton Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Graceton Station
Substation zone	BGE
Substation upgrade scope	BGE will add a second circuit to their structures and terminate them into the existing Conastone and Graceton Stations. This will include remote-end work at Conastone on Circuit #1 and terminal Equipment at Conastone on Circuit #2.

Transformer Information

None

New equipment description	- Build-out existing substation bay for addition of new Furnace Run–Graceton #2 circuit and 22093 relocation. - Reconfigure the protective relaying for former 22093 to reconnect to the Furnace Run-Graceton #2 circuit
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	$9,400,000.00
Component cost (in-service year)	$10,579,783.00

Substation Upgrade Component

Component title	Conastone Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Conastone Station
Substation zone	BGE
Substation upgrade scope	BGE will add a second circuit to their structures and terminate them into the existing Conastone and Graceton Substations. This will include remote-end work at Graceton on Circuit #1 and terminal Equipment at Graceton on Circuit #2.

Transformer Information

None

New equipment description	- A new breaker-and-a-half rung will be installed at Conastone. The existing hot bus, circuit switcher, and ground switch for spare transformer will be relocated. - A separate termination yard to transition from the overhead construction to underground will be installed on BGE owned property located between existing circuit numbers 2302, 2310, and 5013 where an underground 230kV cable (Approximately 700') between the new termination station and a new bay at Conastone will be installed. - The termination yard will be roughly 100' x 100' and be comprised of an H-frame deadened structure, (3) termination/SA structures and (3) optical CT's.
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	$9,000,000.00
Component cost (in-service year)	$10,129,579.00

Transmission Line Upgrade Component

Component title	Ringgold - Catoctin Line Upgrade (138 kV to 230 kV)
Project description	Company confidential and proprietary information
Impacted transmission line	Ringgold - Catoctin
Point A	Ringgold Station
Point B	Catoctin 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	138 KV
Conductor size and type	unknown
Hardware plan description	Its assumed no hardware could be reused.
Tower line characteristics	Currently wood poles serve as the tower structures.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	815.000000	919.000000
Winter (MVA)	1020.000000	1172.000000
Conductor size and type	2- bundle 795 ACSR (26/7)	
Shield wire size and type	unknown	

Rebuild line length	10.0 miles
Rebuild portion description	Rebuild/Reconductor the Ringgold-Catoctin 138 kV circuit and upgrade terminal equipment on both ends.
Right of way	Potomac Edison has already completed the CPCN process in MD and all rights for the transmission line rebuild are secured.
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	$47,200,000.00
Component cost (in-service year)	$51,576,714.00

Substation Upgrade Component

Component title	Dickerson Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Dickerson Station
Substation zone	PEPCO

Substation upgrade scope	Upgrade both 230kV Bus Ties between Dickerson and Dickerson Station H in PEPCO to achieve Summer Emergency Ratings in excess of 800 MVA.

Transformer Information

None

New equipment description	Upgrade 230kV Bus Ties.
Substation assumptions	This Proposed Solution assumes that all necessary outages will be available to execute this work.
Real-estate description	It is anticipated that the Proposed Solution would be contained within the existing substation site and be upgraded to the same voltage, so new siting and land purchase will not be required.
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	$1,000,000.00
Component cost (in-service year)	$1,125,509.00

Transmission Line Upgrade Component

Component title	Conemaugh - Hunterstown 500 kV line Tie-in

Project description	Company confidential and proprietary information
Impacted transmission line	Conemaugh-Hunterstown 500kV line
Point A	Conemaugh Station
Point B	Hunterstown 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 kv
Conductor size and type	unknown
Hardware plan description	No existing hardware will be utilized.
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)	2656.000000	3011.000000
Winter (MVA)	3034.000000	3324.000000
Conductor size and type	unknown	
Shield wire size and type	unkown	
Rebuild line length	0.1 miles	

Rebuild portion description	Tie-in Conemaugh (via Vinco)-Hunterstown 500kV line into Rice Station.
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	$15,200,000.00
Component cost (in-service year)	$17,107,734.00

Transmission Line Upgrade Component

Component title	Peach Bottom - Three Mile Island Tie-in
Project description	Company confidential and proprietary information
Impacted transmission line	Peach Bottom-Three Mile Island Station
Point A	Peach Bottom Station
Point B	Furnace Run Station

Point C	Three Mile Island Station
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 kv
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)	2920.000000	3706.000000
Winter (MVA)	3592.000000	4403.000000
Conductor size and type	unknown	
Shield wire size and type	unknown	
Rebuild line length	0.2 miles	
Rebuild portion description	Tie-in Peachbottom-Three Mile Island 500kV Line into Furnace Run. There will also need to be remote-end work at both Peach Bottom Station and Three Mile Island Station. The scope also includes Furnace Run 500kV Terminal equipment at Peachbottom and upgrading the 500kV Peachbottom 2S and Peachbottom 1N CKT 2 Bus-Tie at Peach Bottom Station in PECO to achieve Summer Emergency Ratings in excess of 3300 MVA.	

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	$15,200,000.00
Component cost (in-service year)	$17,107,734.00

Transmission Line Upgrade Component

Component title	Catoctin to Carroll Line Upgrade (138 kV to 230 kV)
Project description	Company confidential and proprietary information
Impacted transmission line	Catoctin to Carroll
Point A	Catoctin Station
Point B	Carroll 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	138 kV
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 and near existing tower locations.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	815.000000	1020.000000
Winter (MVA)	919.000000	1172.000000
Conductor size and type	2-bundle 795 (26/7)	
Shield wire size and type	unknown	
Rebuild line length	12.3	
Rebuild portion description	Rebuild 12.3-mile Catoctin to Carroll 138kV to 230kV with bundled conductor. Upgrade Terminal Equipment at Mt. Airy as necessary to Achieve Conductor Rating on Carroll–Mount Airy 230kV.	
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	$45,510,000.00
Component cost (in-service year)	$51,221,906.00

Substation Upgrade Component

Component title	Catoctin Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Catoctin Station
Substation zone	APS
Substation upgrade scope	Expand 230kV station at Catoctin to construct a three-breaker ring bus.

Transformer Information

None

New equipment description	Install (1) new 230 kV breaker at Catoctin substation. Install (1) new 230/138 kV transformer at Catoctin substation. Convert Ringgold-Catoctin 138kV Line to 230kV operation.

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	$9,101,309.00
Component cost (in-service year)	$10,243,604.00

Substation Upgrade Component

Component title	Carroll Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Carroll Station
Substation zone	APS

Substation upgrade scope	Expand 230kV at Carroll to construct a three-breaker Ring Bus (3000 Amp). Add 138kV 10% series reactor.

Transformer Information

None

New equipment description	138kv 10% 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	$10,191,134.00
Component cost (in-service year)	$11,470,210.00

Transmission Line Upgrade Component

Component title	Glen Arm 2 – Windy Edge 1 115 kV Line Upgrade
Project description	Company confidential and proprietary information
Impacted transmission line	Glen Arm 2 - Windy Edge 1
Point A	Glen Arm 2 station
Point B	Windy Edge 1 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	115
Conductor size and type	unkown
Hardware plan description	It is assumed that no hardware can 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 near existing tower locations.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	115.000000	115.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	242.000000	300.000000
Winter (MVA)	301.000000	353.000000
Conductor size and type	unkown	
Shield wire size and type	unknown	

Rebuild line length	2.6 miles
Rebuild portion description	Upgrade and Reconductor as necessary on Glen Arm 2 to Windy Edge 1 115kV
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	$3,057,600.00
Component cost (in-service year)	$3,441,356.00

Transmission Line Upgrade Component

Component title	Five Forks – Rock Ridge 1 115kV Line Upgrade
Project description	Company confidential and proprietary information
Impacted transmission line	Five Forks - Rock Ridge
Point A	Five Forks Station

Point B	Rock Ridge 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	115
Conductor size and type	unknown
Hardware plan description	It is assumed that no hardware can 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 near existing tower locations.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	115.000000	115.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	245.000000	300.000000
Winter (MVA)	305.000000	340.000000
Conductor size and type	unknown	
Shield wire size and type	unknown	
Rebuild line length	N/A	
Rebuild portion description	Upgrade and Reconductor as necessary on Five Forks to Rock Ridge 1 115 kV	
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	$7,408,800.00
Component cost (in-service year)	$8,338,670.00

Substation Upgrade Component

Component title	Upgrade Terminal Equipment as necessary at Ringgold, Frostown, Doubs, Old Farm, and Monocacy
Project description	Company confidential and proprietary information
Substation name	Ringgold, Frostown, Doubs, Old Farm, and Monocacy Station
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary at Ringgold, Frostown, Doubs, Old Farm, and Monocacy

Transformer Information

None

New equipment description	Terminal equipment as needed.
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)	$5,402,442.00

Substation Upgrade Component

Component title	Peach Bottom Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Peach Bottom

Substation zone	PECO
Substation upgrade scope	Upgrade Peach Bottom bus ties

Transformer Information

None

New equipment description	Upgrade three Peachbottom 500kV Bus Ties to 4000A capability for Emergency Ratings
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	$4,704,000.00
Component cost (in-service year)	$5,294,393.00

Substation Upgrade Component

Component title	Upgrade Terminal Equipment as necessary at Brandon Shores and Waugh Station
Project description	Company confidential and proprietary information
Substation name	Brandon Shores and Waugh Station
Substation zone	BGE
Substation upgrade scope	Upgrade Terminal Equipment as necessary at Brandon Shores and Waugh Chapel

Transformer Information

None

New equipment description	- Terminal equipment needed
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	$1,920,000.00
Component cost (in-service year)	$2,160,997.00

Substation Upgrade Component

Component title	Marlowe - Boonesboro 138 kV Series Reactor
Project description	Company confidential and proprietary information
Substation name	Marlowe or Boonesboro Station
Substation zone	APS
Substation upgrade scope	Install a 138kV 10% Series Reactor (19 Ohm, 2000 A) with manual bypass on the Marlowe-Boonesboro 138kV Circuit. Location TBD. Reactor operated normally in-service.

Transformer Information

None

New equipment description	Install Series Reactor on Marlowe – Boonsboro line.
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	$3,920,000.00
Component cost (in-service year)	$4,411,995.00

Substation Upgrade Component

Component title	Germantown Station Capacitor Upgrade
Project description	Company confidential and proprietary information
Substation name	Germantown Station
Substation zone	APS
Substation upgrade scope	Add 28.8 MVAr switched capacitor bank at Germantown 115kV Station.

Transformer Information

None

New equipment description	28.8 MVAr switched capacitor bank.
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	$720,000.00
Component cost (in-service year)	$810,366.00

Transmission Line Upgrade Component

Component title	Garrett to Garrett Tap 115 kV Line Upgrade
Project description	Company confidential and proprietary information
Impacted transmission line	Garrett-Garrett Tap
Point A	Garrett Staion
Point B	Garrett Tap
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	115
Conductor size and type	unknown

Hardware plan description	It is assumed that no hardware can 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)	115.000000	115.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	169.000000	197.000000
Winter (MVA)	204.000000	246.000000

Conductor size and type	unknown
Shield wire size and type	unknown
Rebuild line length	2 miles
Rebuild portion description	Upgrade, as necessary, ~2 mile Garrett (APS) to Garrett Tap (PENELEC) 115kV Line to match or exceed the ratings on the Garrett 138/115kV Transformer.
Right of way	Upgrade, as necessary, ~2 mile Garrett (APS) to Garrett Tap (PENELEC) 115kV Line to match or exceed the ratings on the Garrett 138/115kV Transformer.
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	$9,408,000.00
Component cost (in-service year)	$10,588,787.00

Substation Upgrade Component

Component title	Lewiston – Reed Tap 115 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Lewiston Station
Substation zone	PENELEC
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Lewistown-Reed Tap 115kV to achieve conductor limits (198/225/228/290 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Transmission Line Upgrade Component

Component title	Dickerson - Edwards Ferry - Twin Creek – Pleasant View 230 kV Rebuild and Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Impacted transmission line	Dickerson & Edwards Ferry & Twin Creek & Pleasant View 230kV
Point A	Dickerson Station
Point B	Edwards Ferry Station
Point C	Twin Creek Station
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	230

Conductor size and type	unknown
Hardware plan description	unknown
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)	1203.000000	1867.000000
Winter (MVA)	1203.000000	1867.000000

Conductor size and type	unknown
Shield wire size and type	unknown
Rebuild line length	Approximately 3 miles
Rebuild portion description	• Upgrade, as necessary, Dickerson–Edwards Ferry–Twin Creeks–Pleasant View 230kV Circuits to achieve ratings that meet or exceed PEPCO's Conductor Limits on the Dickerson–Edwards Ferry Line. • Upgrade PEPCO Terminal Equipment at Dickerson, if Needed • Upgrade Dominion Facilities, as Necessary. • Expect Re-conductors and Terminal Equipment at Edwards Ferry–Twin Creek–Pleasant View 230kV • Appears to be ~3 miles between Dickerson-Edwards Ferry–Twin Creek 230kV. • Target Ratings 1203/1867 MVA (SN/SE.) Expect Winter Ratings Equal or Higher.
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	$28,616,000.00
Component cost (in-service year)	$32,207,560.00

Substation Upgrade Component

Component title	Morgan – Cherry Run 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Morgan & Cherry Run
Substation zone	PENELEC
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Morgan–Cherry Run 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	French Mill - Hampshire 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	French Mill & Hampshire
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on French Mill-Hampshire 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Hampshire - Gore 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Hampshire & Gore
Substation zone	PenElec

Substation upgrade scope	Upgrade Terminal Equipment as necessary on Hampshire-Gore 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Gore - Stonewall 138 kV Terminal Equipment Upgrade

Project description	Company confidential and proprietary information
Substation name	Gore & Stonewall
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Gore-Stonewall 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00

Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Glen Falls – Harrison Tap 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Glen Falls & Harrison Tap
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Glen Falls–Harrison Tap 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Ridgely - Hampshire 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Ridgely & Hampshire
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Ridgely-Hampshire Tap 138kV to achieve conductor limits (160/192/180/288 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Frostburg – Ridgley 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Frostburg & Ridgley
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Frostburg–Ridgley Tap 138kV to achieve conductor limits (308/376/349/445 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Meadowbrook - Bartonsville 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Meadowbrook & Bartonsville
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Meadowbrook-Bartonsville 138kV to achieve conductor limits (448/516/448/543 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Dans Mountain - Ridgely 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Dans Mountain & Ridgely
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Dans Mountain-Ridgely 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Mt Zion – West Valley 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Mt. Zion & West Valley
Substation zone	APS

Substation upgrade scope	Upgrade Terminal Equipment as necessary on Mt Zion–West Valley 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	West Valley – Cross School 138 kV Terminal Equipment Upgrade

Project description	Company confidential and proprietary information
Substation name	West Valley & Cross School
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on West Valley–Cross School 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00

Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Cross School – Black Oak 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Cross School & Black Oak
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Cross School–Black Oak 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Parr Run - Junction 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Parr Run & Junction
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Parr Run-Junction 138kV to achieve conductor limits (221/268/250/317 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

Substation Upgrade Component

Component title	Riverton - Bethel 138 kV Terminal Equipment Upgrade
Project description	Company confidential and proprietary information
Substation name	Riverton & Bethel
Substation zone	APS
Substation upgrade scope	Upgrade Terminal Equipment as necessary on Riverton-Bethel 138kV to achieve conductor limits (160/192/180/288 MVA (SN/SE/WN/WE))

Transformer Information

None

New equipment description	Terminal equipment
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	$1,920,000.00
Component cost (in-service year)	$2,160,977.00

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-S166	235471	01GORE	235512	01STONEW	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S166	235471	01GORE	235512	01STONEW	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S779	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer 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-GD-S165	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S165	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S166	205912	AD1-020 TAP	204544	27LINCOLN	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-ST90	235101	01BEDNGT	235445	01BEDNGT	2	500/138	201/201	Summer N-1 Thermal	Included
2022W3-GD-S70	235503	01REID	235505	01RINGLD	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S166	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST92	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-GD-S73	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-N1-ST93	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-GD-S72	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-N1-ST94	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-GD-S84	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S85	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-N1-ST106	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S780	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-N1-ST221	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST101	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-N1-ST102	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S166	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST103	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S166	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-ST104	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-N1-ST225	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST105	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S167	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-S94	235523	01BETHEL+	235507	01RIVERT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S95	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S96	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S166	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-N1-ST109	221092	FIVE.FOR	221096	ROCKRGE1	1	115/115	232/232	Summer N-1 Thermal	Included
2022W3-GD-S166	204530	27GERMANTN	235463	01TANEY	1	138	227/201	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-ST231	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Summer N-1 Thermal	Included
2022W3-N1-ST113	235101	01BEDNGT	235445	01BEDNGT	4	500/138	201/201	Summer N-1 Thermal	Included
2022W3-GD-S91	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S90	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-N1-ST116	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Summer N-1 Thermal	Included
2022W3-N1-ST129	221092	FIVE.FOR	221096	ROCKRGE1	1	115/115	232/232	Summer N-1 Thermal	Included
2022W3-N1-ST9	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST7	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST8	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S97	207922	BRIS	204515	27YORKANA	1	230	227/229	Summer Gen Deliv	Included
2022W3-GD-S167	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S167	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S103	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S104	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-N1-ST6	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST127	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST139	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Summer N-1 Thermal	Included
2022W3-N1-ST19	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST140	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Summer N-1 Thermal	Included
2022W3-GD_L11	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-N1-ST20	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Summer N-1 Thermal	Included
2022W3-GD_L12	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-N1-ST18	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT142	200512	26LEWISTWN	200519	26REED TAP	1	115/115	226/226	Winter N-1 Thermal	Included
2022W3-N1-ST10	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST11	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST12	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST132	207922	BRIS	204515	27YORKANA	1	230/230	229/227	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-ST13	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST14	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST15	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST16	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST29	235471	01GORE	235512	01STONEW	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST30	235471	01GORE	235512	01STONEW	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-WT41	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST152	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-WT39	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-WT31	235101	01BEDNGT	235445	01BEDNGT	4	500/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST21	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Summer N-1 Thermal	Included
2022W3-GD_L35	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-N1-WT32	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD_L36	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-N1-WT33	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-WT154	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Winter N-1 Thermal	Included
2022W3-N1-WT34	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST24	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST145	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-WT35	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST25	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST146	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-WT36	235518	01WESTVA	237506	01CROSSCHOOL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-WT38	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST159	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST39	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST160	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST40	204544	27LINCOLN	205912	AD1-020 TAP	1	115/115	227/227	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-WT51	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST41	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W956	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-N1-ST42	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT50	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-WT42	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST32	235471	01GORE	235512	01STONEW	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST153	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-WT43	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT164	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST33	235471	01GORE	235512	01STONEW	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-WT44	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-ST155	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT45	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT163	235471	01GORE	235512	01STONEW	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST35	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-WT46	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-WT162	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST157	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-WT47	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-WT168	207922	BRIS	204515	27YORKANA	1	230/230	229/227	Winter N-1 Thermal	Included
2022W3-N1-ST37	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST158	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Summer N-1 Thermal	Included
2022W3-N1-ST50	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST51	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT62	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST52	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT63	235101	01BEDNGT	235445	01BEDNGT	1	500/138	201/201	Winter 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-ST53	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT53	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-ST167	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT58	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT59	235101	01BEDNGT	235445	01BEDNGT	3	500/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W156	200762	26GARRETT	235470	01GARRET	1	115	226/201	Winter Gen Deliv	Included
2022W3-N1-WT60	235463	01TANEY	235450	01CARROL	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST59	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT72	204550	27ORRTANNA	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-ST62	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W850	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W851	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-N1-ST64	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-W977	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-N1-ST56	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST57	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST178	208069	PPL-BGE TIE	220964	GRACETON	1	230/230	229/232	Summer N-1 Thermal	Included
2022W3-N1-ST58	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	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-ST69	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST70	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-ST71	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W1002	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-N1-ST72	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W73	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter 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-ST73	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-W74	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-ST74	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-N1-WT85	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W63	204514	27TMI	204502	27JACKSON	1	230	227	Winter Gen Deliv	Included
2022W3-GD-W987	200065	PCHBTM2S	200064	PCHBTM1S	Z2	500	230	Winter Gen Deliv	Included
2022W3-N1-WT75	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST65	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-W64	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Winter Gen Deliv	Included
2022W3-N1-WT76	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W65	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-N1-WT77	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W68	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W995	200065	PCHBTM2S	200064	PCHBTM1S	Z1	500	230	Winter Gen Deliv	Included
2022W3-N1-WT78	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W67	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-WT79	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W861	235101	01BEDNGT	235445	01BEDNGT	3	500/138	201	Winter Gen Deliv	Included
2022W3-GD-W190	235469	01GARRET	235449	01CARLOS	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W78	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-W1014	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-S181	235596	01VASC T	235173	01EDGEWT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W872	235101	01BEDNGT	235445	01BEDNGT	1	500/138	201	Winter Gen Deliv	Included
2022W3-GD-W1012	223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-N1-WT86	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W1022	223938	DICKH230	223937	DICK 230	2	230	233	Winter Gen Deliv	Included
2022W3-N1-WT88	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-N1-WT90	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter 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-W191	235469	01GARRET	235449	01CARLOS	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT102	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W86	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-N1-WT103	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W88	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-N1-WT104	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W90	235501	01PARRN	235479	01JUNCTN	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W89	235501	01PARRN	235479	01JUNCTN	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT105	204538	27STRABAN	204529	27GERMANTN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W887	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W81	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W82	200762	26GARRETT	235470	01GARRET	1	115	226/201	Winter Gen Deliv	Included
2022W3-GD-S1815	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-W83	204515	27YORKANA	208048	OTCR	1	230	227/229	Winter Gen Deliv	Included
2022W3-GD-S1816	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-W84	235471	01GORE	235512	01STONEW	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W883	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-W85	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-S1740	235187	01GRANDP	235180	01FAYETT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W93	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S2062	221090	GLENARM2	221089	WINDYED1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S1741	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W899	207922	BRIS	204515	27YORKANA	1	230	227/229	Winter Gen Deliv	Included
2022W3-GD-S1742	235467	01FRNCHM	235592	01HAMPS1	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W95	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-N1-WT112	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W138	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W791	223938	DICKH230	223937	DICK 230	2	230	233	Winter 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-W891	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-W892	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-W1240	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-W3	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-WT3	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W746	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-WT4	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Winter N-1 Thermal	Included
2022W3-GD-W903	207922	BRIS	204515	27YORKANA	1	230	227/229	Winter Gen Deliv	Included
2022W3-N1-WT7	235471	01GORE	235512	01STONEW	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-WT8	235471	01GORE	235512	01STONEW	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-S1744	235467	01FRNCHM	235592	01HAMPS1	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W96	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S1748	235592	01HAMPS1	235471	01GORE	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W900	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S1749	235592	01HAMPS1	235471	01GORE	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W97	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S1754	204529	27GERMANTN	204530	27GERMANTN	1	115/138	227	Summer Gen Deliv	Included
2022W3-GD-W104	200762	26GARRETT	235470	01GARRET	1	115	226/201	Winter Gen Deliv	Included
2022W3-GD-W769	235187	01GRANDP	235180	01FAYETT	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W107	235468	01FROSTB	235504	01RIDGLY	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1752	208395	FARO FF	208393	FARO DC TIE	2	69/115	229	Summer Gen Deliv	Included
2022W3-GD-W12	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-GD-W106	235468	01FROSTB	235504	01RIDGLY	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT14	235101	01BEDNGT	235445	01BEDNGT	2	500/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-S1051	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S247	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W15	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W108	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter 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-S110	207922	BRIS	204515	27YORKANA	1	230	227/229	Summer Gen Deliv	Included
2022W3-GD-S249	235504	01RIDGLY	235484	01MESSCK	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W16	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W91	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S167	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W11	235490	01MORGAN	235453	01CHERYR	1	138	201	Winter Gen Deliv	Excluded
2022W3-GD-S252	235504	01RIDGLY	235484	01MESSCK	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W19	207922	BRIS	204515	27YORKANA	1	230	227/229	Winter Gen Deliv	Included
2022W3-GD-W11	235490	01MORGAN	235453	01CHERYR	1	138	201	Winter Gen Deliv	Excluded
2022W3-GD-W31	235504	01RIDGLY	235484	01MESSCK	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S260	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W775	235105	01DOUBS	235459	01DOUBS	1	500/230	201	Winter Gen Deliv	Included
2022W3-GD-W31	235504	01RIDGLY	235484	01MESSCK	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT11	235471	01GORE	235512	01STONEW	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-S206	221090	GLENARM2	221089	WINDYED1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-W906	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S175	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-N1-WT10	235471	01GORE	235512	01STONEW	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-S175	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W105	200762	26GARRETT	235470	01GARRET	1	115	226/201	Winter Gen Deliv	Included
2022W3-GD-S175	200532	26ROXBURY	235188	01GREENE	1	138	226/201	Summer Gen Deliv	Included
2022W3-GD-S176	208395	FARO FF	208393	FARO DC TIE	1	69/115	229	Summer Gen Deliv	Included
2022W3-GD-W23	235050	AD2-180 TAP	235501	01PARRN	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT23	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Winter N-1 Thermal	Included
2022W3-GD-S81N	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W790	235503	01REID	235505	01RINGLD	1	138	201	Winter Gen Deliv	Included
2022W3-N1-LLT50	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Light Load N-1	Included
2022W3-GD-S168	204530	27GERMANTN	235463	01TANEY	1	138	227/201	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-GD-W791	235523	01BETHEL+	235507	01RIVERT	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W116	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Winter Gen Deliv	Included
2022W3-N1-WT26	235492	01MTZION	235518	01WESTVA	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-S1682	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-W792	235523	01BETHEL+	235507	01RIVERT	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W117	235471	01GORE	235512	01STONEW	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT27	235492	01MTZION	235518	01WESTVA	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-S114	235101	01BEDNGT	235445	01BEDNGT	2	500/138	201	Summer Gen Deliv	Included
2022W3-GD-W118	235471	01GORE	235512	01STONEW	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT28	235492	01MTZION	235518	01WESTVA	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-S1683	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-W920	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-N1-WT29	235492	01MTZION	235518	01WESTVA	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-N1-ST244N	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1	Included
2022W3-GD-S1682	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-W28	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-W121	200519	26REED TAP	200522	26SHADE GP	1	115	226	Winter Gen Deliv	Included
2022W3-N1-WT30	235492	01MTZION	235518	01WESTVA	1	138/138	201/201	Winter N-1 Thermal	Included
2022W3-GD-W114	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S1682	204514	27TMI	204502	27JACKSON	1	230	227	Summer Gen Deliv	Included
2022W3-GD-W112	237506	01CROSSCHOOL	235446	01BLACKO	1	138	201	Winter Gen Deliv	Included
2022W3-N1-WT20	204530	27GERMANTN	235463	01TANEY	1	138/138	227/201	Winter N-1 Thermal	Included
2022W3-GD-W8062S	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S112	235523	01BETHEL+	235507	01RIVERT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W781	235187	01GRANDP	235180	01FAYETT	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W113	237506	01CROSSCHOOL	235446	01BLACKO	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S113	235523	01BETHEL+	235507	01RIVERT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S262	235180	01FAYETT	235271	01WWAYNE	1	138	201	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-GD-W22	235050	AD2-180 TAP	235501	01PARRN	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S168	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S42N	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-W123	204544	27LINCOLN	204538	27STRABAN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-ST249	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1	Included
2022W3-GD-S169	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-W38	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W928	235334	01GLENFL	235349	01HARR T	1	138	201	Winter Gen Deliv	Included
2022W3-N1-ST248	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-S119	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S177	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S203	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W931	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-N1-ST250	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1	Included
2022W3-GD-W41	204544	27LINCOLN	204538	27STRABAN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-W125	200519	26REED TAP	200522	26SHADE GP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-S281	200065	PCHBTM2S	200064	PCHBTM1S	Z1	500	230	Summer Gen Deliv	Included
2022W3-GD-W126	200532	26ROXBURY	235188	01GREENE	1	138	226/201	Winter Gen Deliv	Included
2022W3-GD-S125	204529	27GERMANTN	204530	27GERMANTN	1	115/138	227	Summer Gen Deliv	Included
2022W3-GD-S169	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W130	235483	01MDWBRK	235444	01BART 1	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W122	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-S168	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-W29	235463	01TANEY	235450	01CARROL	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W138	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-ST246	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-S169	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-S276	204514	27TMI	204502	27JACKSON	1	230	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-GD-W31	204550	27ORRTANNA	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-N1-ST245N	204544	27LINCOLN	204538	27STRABAN	1	115/115	227/227	Summer N-1	Included
2022W3-GD-S1692	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-N1-ST247N	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-W814	204544	27LINCOLN	204538	27STRABAN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-W942	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-GD-S135	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W815	235503	01REID	235505	01RINGLD	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1692	235518	01WESTVA	237506	01CROSSCHOOL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1778	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1698	235518	01WESTVA	237506	01CROSSCHOOL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W1252	200519	26REED TAP	200522	26SHADE GP	1	115	226	Winter Gen Deliv	Included
2022W3-GD-W949	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD_L82	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-W50	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S136	235101	01BEDNGT	235445	01BEDNGT	4	500/138	201	Summer Gen Deliv	Included
2022W3-GD-W51	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-GD-S139	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD_L83	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-W132	200065	PCHBTM2S	200064	PCHBTM1S	Z2	500	230	Winter Gen Deliv	Included
2022W3-GD-S1778	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-S127	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S1778	235483	01MDWBRK	235444	01BART 1	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W44	204550	27ORRTANNA	204544	27LINCOLN	1	115	227	Winter Gen Deliv	Included
2022W3-GD_128	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Light Load Gen Deliv	Included
2022W3-GD-S1698	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1774	235483	01MDWBRK	235444	01BART 1	1	138	201	Summer Gen Deliv	Included
2022W3-GD_122	223938	DICKH230	223937	DICK 230	1	230/230	233/233	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-W55	235518	01WESTVA	237506	01CROSSCHOOL	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S178	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD-W56	235518	01WESTVA	237506	01CROSSCHOOL	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S147	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W831	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W832	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD_L15	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S170	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S326	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD_L116	237310	01DANSMTN	235504	01RIDGLY	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S152	200512	26LEWISTWN	200519	26REED TAP	1	115	226	Summer Gen Deliv	Included
2022W3-GD-W136	235504	01RIDGLY	235593	01HAMPS2	1	138	201	Winter Gen Deliv	Included
2022W3-GD_L115	237310	01DANSMTN	235504	01RIDGLY	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S155	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W58	204538	27STRABAN	204529	27GERMANTN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S203	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S179	235479	01JUNCTN	235467	01FRNCHM	1	138	201	Summer Gen Deliv	Included
2022W3-GD-W53	235492	01MTZION	235518	01WESTVA	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S312	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W52	235492	01MTZION	235518	01WESTVA	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S170	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD_L92	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD_L91	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S179	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-W130	200747	26PENN-MAR	200762	26GARRETT	1	115	226	Winter Gen Deliv	Included
2022W3-GD-S164	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W122	200532	26ROXBURY	235188	01GREENE	1	138	226/201	Winter Gen Deliv	Included
2022W3-GD-S179	220962	NWEST311	220972	GRANITE1	1	230	232	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-GD-W61	237310	01DANSMTN	235504	01RIDGLY	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W1040	200762	26GARRETT	235470	01GARRET	1	115	226/201	Winter Gen Deliv	Included
2022W3-GD-S1712	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W62	237310	01DANSMTN	235504	01RIDGLY	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1714	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W849	204538	27STRABAN	204529	27GERMANTN	1	115	227	Winter Gen Deliv	Included
2022W3-GD-S336	235486	01MILLVL	235597	01LOVETT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1718	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD_L390	235503	01REID	235505	01RINGLD	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S1792	235479	01JUNCTN	235467	01FRNCHM	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1710	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W841	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S1711	235187	01GRANDP	235180	01FAYETT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1792	204515	27YORKANA	208048	OTCR	1	230	227/229	Summer Gen Deliv	Included
2022W3-GD-W842	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S1708	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W1150	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S2047	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S340	204515	27YORKANA	208048	OTCR	1	230	227/229	Summer Gen Deliv	Included
2022W3-GD_L137	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S1719	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_L147	235446	01BLACKO	235103	01BLACKO	3	138/500	201/201	Light Load Gen Deliv	Included
2022W3-GD-S2052	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD_L138	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S1721	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W1023	235468	01FROSTB	235504	01RIDGLY	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1720	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	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-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-W118	235469	01GARRET	235449	01CARLOS	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1717	235463	01TANEY	235450	01CARROL	1	138	201	Summer 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-S1718	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD_L18	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD_L17	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S1728	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1807	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-W98N	235518	01WESTVA	237506	01CROSSCHOOL	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1728	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD_L141	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-W110	235501	01PARRN	235479	01JUNCTN	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1727	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-W100	237310	01DANSMTN	235504	01RIDGLY	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1882	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-GD-W119	235592	01HAMPS1	235471	01GORE	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S2052	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD_L143	235504	01RIDGLY	235593	01HAMPS2	1	138/138	201/201	Light Load Gen Deliv	Included
2022W3-GD-S1724	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1723	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S3462	200065	PCHBTM2S	200066	PCHBTM1N	2	500	230	Summer Gen Deliv	Included
2022W3-GD-W103	235471	01GORE	235512	01STONEW	1	138	201	Winter Gen Deliv	Included
2022W3-GD-W106	235492	01MTZION	235518	01WESTVA	1	138	201	Winter Gen Deliv	Included
2022W3-GD-S1732	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	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-GD-S201	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S202	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-N1-LLT6	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load N-1	Included
2022W3-GD-W794	223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-N1-LLT5	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load N-1	Included
2022W3-GD-S214	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-N1-LLT8	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT7	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load N-1	Included
2022W3-GD-W795	223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-N1-LLT9	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load N-1	Included
2022W3-GD-S172	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-WT18	235483	01MDWBRK	235444	01BART 1	1	138/138	201/201	Winter N-1	Included
2022W3-GD-S221	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-N1-LLT1	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load N-1	Included
2022W3-GD-S173	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-LLT10	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT13	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT12	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT26	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load N-1	Excluded
2022W3-N1-LLT20	235490	01MORGAN	235453	01CHERYR	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT36	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT33	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load N-1	Included
2022W3-N1-LLT32	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load N-1	Included
2022W3-N1-LLT35	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT49	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT40	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT42	235471	01GORE	235512	01STONEW	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT44	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	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-N1-LLT43	235467	01FRNCHM	235592	01HAMPS1	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT46	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Light Load N-1	Included
2022W3-N1-LLT45	235592	01HAMPS1	235471	01GORE	1	138/138	201/201	Light Load N-1	Included
2022W3-GD-S2	235490	01MORGAN	235453	01CHERYR	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S8	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1642	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1	235490	01MORGAN	235453	01CHERYR	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S16	235187	01GRANDP	235180	01FAYETT	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1643	204550	27ORRTANNA	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST184	208071	SAHA34TP	208069	PPL-BGE TIE	1	230/230	229/229	Summer N-1 Thermal	Included
2022W3-GD-S1644	235463	01TANEY	235450	01CARROL	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S13	235484	01MESSCK	235490	01MORGAN	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S14	235484	01MESSCK	235490	01MORGAN	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1641	204530	27GERMANTN	235463	01TANEY	1	138	227/201	Summer Gen Deliv	Included
2022W3-GD-S1642	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S15	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1643	204550	27ORRTANNA	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S23	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1644	204544	27LINCOLN	204538	27STRABAN	1	115	227	Summer Gen Deliv	Included
2022W3-N1-ST183	204538	27STRABAN	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S1647	235490	01MORGAN	235453	01CHERYR	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1648	235490	01MORGAN	235453	01CHERYR	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1652	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-N1-ST84	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S1652	204539	27HUNTRSTN	205912	AD1-020 TAP	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1649	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S47	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S2012	235504	01RIDGLY	235593	01HAMPS2	1	138	201	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-GD-S1652	204538	27STRABAN	204529	27GERMANTN	1	115	227	Summer Gen Deliv	Included
2022W3-GD-S1652	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S49	235503	01REID	235505	01RINGLD	1	138	201	Summer Gen Deliv	Included
2022W3-GD-S1652	207922	BRIS	204515	27YORKANA	1	230	227/229	Summer Gen Deliv	Included
2022W3-N1-ST82	205912	AD1-020 TAP	204544	27LINCOLN	1	115/115	227/227	Summer N-1 Thermal	Included
2022W3-GD-S1652	205912	AD1-020 TAP	204544	27LINCOLN	1	115	227	Summer Gen Deliv	Included

New Flowgates

Company confidential and proprietary information

Financial Information

Capital spend start date	07/2023
Construction start date	03/2025
Project Duration (In Months)	44

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. Rice – Ringgold 230 kV Greenfield Transmission Line - Transource
2. Rice 500/230 kV Greenfield Station - Transource
3. Furnace Run 500/230 kV Greenfield Station - Transource

Cost elements covered by cost containment

Engineering & design	Yes

Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	Yes
AFUDC	Yes
Escalation	Yes
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