2030 Solution

General Information

Proposing entity name	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Company proposal ID	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
PJM Proposal ID	911
Project title	2030 Solution
Project description	This proposal includes the following projects: 1. 993189 - Line 2028 Rebuild - Charlottesville - Fork Union. 2. 993418 - Line 259 Uprate - Chesterfield to Basin. 3. 993450 - Line 2193 Rebuild - Bremo to Fork Union 4. 993584 - Lines 211 & 228 Uprate - Chesterfield to Hopewell. 5. 993584 - Line 565 Rebuild - Suffolk to Yadkin
Email	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Project in-service date	06/2030
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Project Components

1. Line 259 Rebuild - Basin to Chesterfield (99-3418)
2. Basin Substation Terminal Equipment Uprate (99-3418)
3. Chesterfield Substation Terminal Equipment Uprate (99-3418)
4. Line 2028 Rebuild - Charlottesville to Fork Union (99-3189)

5. Charlottesville Substation Terminal Equipment Uprate (99-3189)
6. Fork Union Substation Terminal Equipment Uprate (99-3189)
7. Mt Eagle Tap Disconnect Switches Upgrade (99-3189)
8. Line 2193 Rebuild - Fork Union to Bremo (99-3450)
9. Bremo Substation Terminal Equipment Upgrade (99-3450)
10. Fork Union Substation Terminal Equipment Upgrade (99-3450)
11. Lines 211/228 Rebuild - Chesterfield to Hopewell (99-3585)
12. Chesterfield Substation Equipment Upgrade (99-3585)
13. Sycamore Springs Substation Relay Reset (99-3585)
14. Line 565 Rebuild - Suffolk to Yadkin (99-3584)
15. Suffolk Substation Terminal Equipment Upgrade (99-3584)
16. Yadkin Substation Terminal Equipment Upgrade (99-3584)

Transmission Line Upgrade Component

Component title	Line 259 Rebuild - Basin to Chesterfield (99-3418)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line # 259
Point A	Basin
Point B	Chesterfield
Point C	
Terrain description	The project is approximately 12.5 miles long in the Piedmont region, traversing Chesterfield County and Richmond City. The area is mostly suburban with some densely populated sections. The project proposes several crossings of I-95 as well as Routes 288 and 895. There are multiple railroad track crossings and wetland areas. There are elevation changes along the route with the highest point being approximately 122 feet and the lowest being approximately 7 feet.
Existing Line Physical Characteristics	
Operating voltage	230

Conductor size and type	2500 ACAR (84/7) 90°C MOT [4.92 miles]; 1033.5 ACSS (45/7) 150°C MOT [3.82 miles]; 2-721 ACAR (18/19) 90°C MOT [1.99 miles]; 2-636 ACSR (24/7) 150°C MOT [0.34 miles]
Hardware plan description	New hardware will be used for line rebuild.
Tower line characteristics	Existing Structures will be removed and new structures will be used for this rebuild.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1573.000000
Winter (MVA)	1648.000000	1648.000000
Conductor size and type	2-768.2 ACSS/TW/HS (20/7) 250°C MOT	
Shield wire size and type	(2) DNO-11410 OPGW	
Rebuild line length	12.4 Miles	

Rebuild portion description	PERMANENT FACILITIES TO BE INSTALLED: 1. Install forty-eight (48) 230 kV double circuit monopole steel tangent structures on foundations as follows: a. Fourteen (14) Line 259 (line 2065) Structures. b. Twenty (20) Line 259 (line 282) Structures. c. Sixteen (16) Line 259 (line 208) Structures. 2. Install six (6) 230 kV double circuit steel tangent v-string structures on foundations as follows: a. Four (4) Line 259 (line 2065) Structures. b. Two (2) Line 259 (line 282) Structures. 3.Install twenty-nine (29) 230 kV double circuit steel deadend structures on foundations as follows: a. Seven (7) Line 259 (line 2065) Structures. b. Sixteen (16) Line 259 (line 282) Structures. c. Six (6) Line 259 (line 208) Structures. 4. Install three (3) 230 kV double circuit steel delta structures custom arm and v-string phase on foundations as follows: a. Three (3) Lines 259 (lines 282) Structures. 5. Install eighteen (18) 230 kV double circuit steel 2 pole deadend structures on foundations as follows: a. Three (3) Lines 259 (lines 2065) Structures. b. One (1) Lines 2065 (line 282) Structures. c. Seven (7) Line 259 (lines 282) Structures. d. Seven (7) Line 259 (lines 208) Structures. 6. Install one (1) 230 /115kV 4C double circuit steel 3 pole DDE structures on foundations as follows: a. One (1) Line 259 (line 282) Structure 56 (116) 7. Install one (1) 230kV single circuit steel DDE structure on foundations as follows: a. One (1) Line 259 Structure 30 (SC) 8. Install approximately 24.8 miles of 3-phase 2-768.2 ACSS/TW/HS (20/7) “Maumee” conductor as follows: a. 12.4 miles from structures: 259/1A-106A [LINE 259] b. 3.07 miles from structures: 2065/172-143 [LINE 2065] c. 5.35 miles from structures:282/143-94 [LINE 282] d. 3.98 miles from structures: 208/70-96 [LINE 208] 9. Install approximately 24.8 miles of two (2) DNO-11410 OPGW as follows: a. 12.4 miles from structures: 259/1A-106A [LINE 259] b. 3.07 miles from structures: 2065/172-143 [LINE 2065] c. 5.35 miles from structures: 282/143-94 [LINE 282] d. 3.98 miles from structures: 208/70-96 [LINE 208] [Refer to 99-3418 Conceptual Scope and One Line for complete description of rebuild]
Right of way	Existing Right-of-Way shall be used. The right of way width varies throughout the path of this project ranging from 0-300ft for ranges of structures based off map viewer, or right of way extents provided by Dominion.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$100,305,520.00
Component cost (in-service year)	$107,427,212.00

Substation Upgrade Component

Component title	Basin Substation Terminal Equipment Uprate (99-3418)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Basin
Substation zone	345
Substation upgrade scope	Purchase & Install Substation Material: 1. One (1), 230kV, 4000A Center Break Switches (vertically mounted) 2. One (1), 230kV, 4000A Double End Break Switches 3. One (1), 230kV, 80kAIC, 4000A, SF6 Circuit Breaker 4. Three (3), 180kV MO (S), 144kV MCOV, Surge Arresters 5. Three (3), 230kV, Coupling Capacitor Voltage Transformers, Relay Accuracy 6. Approximately 80 FT, 5 IN Sch. 40 Bus 7. Conductor, connectors, conduit, control cable, foundations, structures, and grounding material as per engineering standards. Remove Substation Material: 1. Two (2), 230kV, 2000A Center Break Switches 2. One (1), 230kV, 40kAIC, 3000A, SF6 Circuit Breaker 3. One (1), 230kV, 2000A Wave Trap 4. One (1), 230kV, Coupling Capacitor Voltage Transformers, Relay Accuracy 5. Approximately 80FT, 3 ½ IN Sch. 40 Bus 6. Conductor, connectors, conduit, control cable, foundations, structures, and grounding material as per engineering standards. Purchase & Install Relay Material: 1. One (1), 4510 – SEL-2411 Equipment Annunciator 2. One (1), 1510 – 24” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 3. One (1), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 4. One (1), 4506 – 3Ø CCVT Potential Makeup Box 5. One (1), 1340 – Dual SEL-411L CD/Fiber Line Panel 6. One (1), 4526_A – Circuit Breaker Fiber Optic Makeup Box 7. Two (2), Panel Retirement

Transformer Information

None

New equipment description	1. One (1), 230kV, 4000A Center Break Switches (vertically mounted) 2. One (1), 230kV, 4000A Double End Break Switches 3. One (1), 230kV, 80kAIC, 4000A, SF6 Circuit Breaker 4. Three (3), 180kV MO (S), 144kV MCOV, Surge Arresters 5. Three (3), 230kV, Coupling Capacitor Voltage Transformers, Relay Accuracy 6. One (1), 4510 – SEL-2411 Equipment Annunciator 7. One (1), 1510 – 24” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 8. One (1), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 9. One (1), 4506 – 3Ø CCVT Potential Makeup Box 10. One (1), 1340 – Dual SEL-411L CD/Fiber Line Panel 11. One (1), 4526_A – Circuit Breaker Fiber Optic Makeup Box
Substation assumptions	The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. Relay Settings and P&C design will be revised as part of the SPE Scope of Work. 4-hole pad connections must be replaced with 6-hole pad connections to maintain 4000A ratings.
Real-estate description	Substation is not being expanded.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$1,963,412.70
Component cost (in-service year)	$2,102,815.32

Substation Upgrade Component

Component title	Chesterfield Substation Terminal Equipment Uprate (99-3418)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Chesterfield
Substation zone	345
Substation upgrade scope	Purchase & Install Substation Material: 1. Four (4), 230kV, 4000A Double End Break Switch 2. Two (2), 230kV, 80kAIC, 4000A, SF6 Circuit Breakers 3. Three (3), 180kV MO (S), 144kV MCOV, Surge Arresters 4. Approximately 270 FT. of 5 in. Sch. 40 AL tube and connectors. 5. Conductor, connectors, conduit, control cable, foundations, structures, and grounding material as per engineering standards. Remove Substation Material: 1. Four (4), 230kV, 2000A Center Break Switches 2. One (1), 230kV, 40kAIC, 2000A, SF6 Circuit Breaker 3. One (1), 230kV, 40kAIC, 3000A, SF6 Circuit Breaker 4. One (1), 230kV, 3000A Wave Trap 5. Three (3), 180kV MO (S), 144kV MCOV, Surge Arresters 6. Approximately 270 FT. of 3 ½ in. Sch. 40 AL tube and connectors. 7. Conductor, connectors, conduit, control cable, foundations, structures, and grounding material as per engineering standards. Purchase & Install Relay Material: 1. Two (2), 4510 – SEL-2411 Equipment Annunciator 2. Two (2), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 3. One (1), 1340 – Dual SEL-411L CD/Fiber Line Panel 4. Two (2), 4526_A – Circuit Breaker Fiber Optic Makeup Box 5. One (1), Panel Retirement

Transformer Information

None

New equipment description	1. Four (4), 230kV, 4000A Double End Break Switch 2. Two (2), 230kV, 80kAIC, 4000A, SF6 Circuit Breakers 3. Three (3), 180kV MO (S), 144kV MCOV, Surge Arresters 4. Two (2), 4510 – SEL-2411 Equipment Annunciator 5. Two (2), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 6. One (1), 1340 – Dual SEL-411L CD/Fiber Line Panel 7. Two (2), 4526_A – Circuit Breaker Fiber Optic Makeup Box
Substation assumptions	The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. Relay Settings and P&C design will be revised as part of the SPE Scope of Work. 4-hole pad connections must be replaced with 6-hole pad connections to maintain 4000A ratings.
Real-estate description	Substation is not being expanded.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$3,510,657.30
Component cost (in-service year)	$3,759,913.97

Transmission Line Upgrade Component

Component title	Line 2028 Rebuild - Charlottesville to Fork Union (99-3189)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line 2028
Point A	Charlottesville
Point B	Fork Union
Point C	
Terrain description	The project is approximately 24 miles long in the Piedmont region, traversing Albemarle, Fluvanna, and Buckingham Counties. The area is mostly rural and some suburban regions. The project crosses Interstate 64 and a Norfolk Southern Track. There are elevation changes along the route with the highest point being approximately 515 feet and the lowest being approximately 279 feet.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	2-636.0 ACSR (24/7) 150°C MOT
Hardware plan description	New hardware will be used for line rebuild
Tower line characteristics	Existing Structures will be removed and new structures will be used for this rebuild.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1573.000000
Winter (MVA)	1648.000000	1648.000000
Conductor size and type	2-768.2 ACSS/TW/HS (20/7) 250°C MOT	
Shield wire size and type	(2) DNO-10410 shield wire	
Rebuild line length	23.5	

Rebuild portion description	EXISTING FACILITIES TO BE REMOVED: 1. Remove (17) existing single circuit 2 pole H-frame concrete suspension strs. 2. Remove (2) existing single circuit 2 pole H-frame steel suspension strs. 3. Remove (1) existing single circuit 2 pole H-frame steel double deadend strs. 4. Remove (116) existing single circuit 2 pole H-frame wood suspension strs. 5. Remove (3) existing single circuit 2 pole H-frame wood double deadend strs. 6. Remove (9) existing single circuit wood 3 pole double deadend strs. 7. Remove (22) existing double circuit steel tower strs on foundations. 8. Remove (1)self-supporting switch str. on foundations. 9. Remove 2-636 ACSR (24/7) conductor. 10. Remove approx. 13.48 miles of 2-721 ACAR (18/19) conductor from str. 2028/74 to 2028/173. 11. Remove approx. 23.90 miles of (2) 3#6 Alumoweld shield wire from str. 2028/1A (I5/1A) to 2028/92 and from 2028/93 to 2028/176. 12. Remove approx. 0.23 miles of (1) 3#6 Alumoweld shield wire from str. 2028/22 (I5/122) to I5/23. 13. Remove approx. 0.17 miles of (2) 7#7 Alumoweld shield wire from str. 2028/92 to 2028/93. MODIFICATIONS TO EXISTING FACILITIES: 1. Replace (15) existing 230kV conductor strain insulator assemblies with (15) 230kV bundled conductor crossing strain assemblies. 2. Replace (21) existing 230kV conductor strain insulator assemblies with (21) 230kV bundled conductor strain assemblies. 3. Replace (32) existing shield wire strain insulator assemblies with (32) OPGW strain assemblies. PERMANENT FACILITIES TO BE INSTALLED: 1. Install (137) 230 kV double circuit monopole steel monopole tangent strs. 2. Install (28) 230 kV double circuit steel monopole dead end strs. on foundations as follows: a. Structures 2028/1, 3-5, 9, 11, 13, 16, 21-23, 31, 34, 48, 54, 68, 73, 86, 99-100, 102, 120, 125, 129, 137, 157, 168, 173 3. Install (4) 230 kV double circuit steel 2 pole deadend strs. on foundations as follows: a. Strs. 2028/12, 14-15, 20 4. Install (1) 230kV double circuit steel backbone DDE str. with switch attachments on foundations as follows: a. Strs. 2028/43B 5. Install approx. 23.90 miles of single circuit 3-phase 2-768.2 ACSS/TW/HS 250 MOT conductor from str. 2028/1A (I5/1A) to 2028/92 and from 2028/93 to 2028/176. 6. Install approx. 24.08 miles of(2) DNO-11410 OPGW from str. 2028/1A to 2028/176. a. Assumes 20 OPGW splices throughout the line.
Right of way	Existing Right-of-Way will be used.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$106,490,932.00
Component cost (in-service year)	$114,051,789.00

Substation Upgrade Component

Component title	Charlottesville Substation Terminal Equipment Uprate (99-3189)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Charlottesville
Substation zone	355
Substation upgrade scope	Purchase & Install Substation Material: 1. Two (2), 230kV, 80kAIC, 4000A, SF6 Circuit Breakers. 2. Two (2), 230kV, 4000A Double End Break Switches. 3. Two (2), 230kV, 4000A Center Break Switches. 4. One (1), 230kV, 4000 A Wave Trap. 5. Approximately 100 FT 5 in. Sch. 40 AL tube bus. 6. Conductor, connectors, conduit, control cable, foundations, steel structures, and grounding material as necessary per engineering standards. Remove Substation Material: 1. Two (2), 230kV, 50kAIC, 3000A, SF6 Circuit Breaker. 2. Two (2), 230kV, 3000A Center Break Switches. 3. Two (2), 230kV, 2000A Center Break Switches. 4. One (1), 230kV, 2000 A Wave Trap 5. Approximately 100 FT 3.5 in. Sch. 40 AL tube bus. Reuse and Relocate Substation Material: 1. Four (4), 230kV, Coupling Capacitor Voltage Transformers 2. Three (3), 230kV, 180kV, 144kV MCOV (S) Arresters Purchase & Install Relay Material: 1. Two (2), 1510 – 24” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 2. Two (2), 4510 – SEL-2411 Equipment Annunciator 3. Two (2), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 4. Two (2), 4526_A – Circuit Breaker or <84MVA TX Fiber Optic Makeup Box 5. Two (2), Retired Panels

Transformer Information

None

New equipment description	1. Two (2), 230kV, 80kAIC, 4000A, SF6 Circuit Breakers. 2. Two (2), 230kV, 4000A Double End Break Switches. 3. Two (2), 230kV, 4000A Center Break Switches. 4. One (1), 230kV, 4000 A Wave Trap. 5. Two (2), 1510 – 24” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 6. Two (2), 4510 – SEL-2411 Equipment Annunciator 7. Two (2), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 8. Two (2), 4526_A – Circuit Breaker or <84MVA TX Fiber Optic Makeup Box
Substation assumptions	The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. Relay Settings and protection & control design will be revised as part of the SPE scope of work.
Real-estate description	Substation is not being expanded.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$3,351,321.80
Component cost (in-service year)	$3,589,265.86

Substation Upgrade Component

Component title	Fork Union Substation Terminal Equipment Uprate (99-3189)

Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Fork Union
Substation zone	355
Substation upgrade scope	Purchase & Install Substation Material: 1. Two (2), 230kV, 4000A, 80kAIC, Circuit Breaker. 2. Two (2), 230kV, 4000A, Double End Break Switch. 3. Two (2), 230kV, 4000A, Center Break Switch 4. One (1), 230kV, 4000A Wave Trap 5. Conductor, connectors, conduit, control cable, foundations, structures, and grounding material as per engineering standards Remove Substation Material: 1. Two (2), 230kV, 3000A, 63kAIC, Circuit Breaker 2. Four (4), 230kV, 3000A, Center Break Switch 3. One (1), 230kV, 3000A, Wave Trap 4. Conductor, connectors, conduit, control cable, foundations, structures, and grounding material as per engineering standards Purchase & Install Relay Material: 1. Two (2), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) Reuse Relay Material: 1. Two (2), 4510 - SEL-2411 Equipment Annunciator 2. Two (2), 1510 – 24” Single SEL-351 Transmission Breaker w/ Reclosing Panel 3. Two (2), 4526_A – Circuit Breaker Fiber Optic Makeup Box

Transformer Information

None

New equipment description	1. Two (2), 230kV, 3000A, 63kAIC, Circuit Breaker 2. Four (4), 230kV, 3000A, Center Break Switch 3. One (1), 230kV, 3000A, Wave Trap 4. Two (2), 4510 - SEL-2411 Equipment Annunciator 5. Two (2), 1510 – 24” Single SEL-351 Transmission Breaker w/ Reclosing Panel 6. Two (2), 4526_A – Circuit Breaker Fiber Optic Makeup Box
Substation assumptions	The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. Relay Settings and P&C design will be revised as part of the SPE Scope of Work. Project 99-3450 is also occurring at Fork Union Substation.
Real-estate description	Substation is not being expanded.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$2,236,322.70
Component cost (in-service year)	$2,395,101.93

Substation Upgrade Component

Component title	Mt Eagle Tap Disconnect Switches Upgrade (99-3189)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Mt Eagle Tap
Substation zone	355
Substation upgrade scope	Purchase & Install Substation Material: 1. Two (2), 230kV, 4000A, 3-Phase Vertical Break Switches with vacuum interrupter attachment. 2. Two (2), Motor Operators, 10-20K IN-LB. 3. Conductor, connectors, conduit, control cable, foundations, steel structures, and grounding material as necessary per engineering standards. Remove Substation Material: 1. Two (2), 230kV, 3000A, 3-Phase Vertical Switch Break with vacuum interrupter attachment. 2. Connectors, foundation, steel structures, and grounding material as necessary per engineering standards. Purchase & Install Relay Material: 1. One (1), 4103 – Non-Earthing Switch MOAB AC/DC Distribution Box. 2. Two (2), 4548 – Non-Earthing Switch MOAB Control Box. 3. One (1), Relay Reset.

Transformer Information

None

New equipment description	1. Two (2), 230kV, 4000A, 3-Phase Vertical Break Switches with vacuum interrupter attachment. 2. Two (2), Motor Operators, 10-20K IN-LB. 3. One (1), 4103 – Non-Earthing Switch MOAB AC/DC Distribution Box. 4. Two (2), 4548 – Non-Earthing Switch MOAB Control Box.

Substation assumptions	1. The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. 2. Relay Settings and protection & control design will be revised as part of the SPE scope of work.
Real-estate description	The substation will not be expanded for this project.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$646,919.10
Component cost (in-service year)	$692,850.25

Transmission Line Upgrade Component

Component title	Line 2193 Rebuild - Fork Union to Bremo (99-3450)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line 2193
Point A	Fork Union
Point B	Bremo

Point C

Terrain description	The project is in the Piedmont region, specifically Fluvanna County. The area is mostly rural. There are a few stream and wetland crossings as well as one minor arterial roads. There are elevation changes along the route with the highest being approximately 308 feet and the lowest being approximately 220 feet.

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	2-721ACAR (18/19) 90°C MOT [1.63 Miles], 2-636 ACSR (24/7) 150°C MOT [0.11 Miles]
Hardware plan description	New hardware will be used for line rebuild.
Tower line characteristics	Existing Structures will be removed and new structures will be used for this rebuild.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1573.000000
Winter (MVA)	1648.000000	1648.000000
Conductor size and type	2-768.2 ACSS/TW/HS (20/7) 250°C MOT	
Shield wire size and type	(2) DNO-11410 OPGW	
Rebuild line length	1.74 Miles	

Rebuild portion description	EXISTING FACILITIES TO BE REMOVED: 1. Remove (8) existing 230kV single circuit wood H-frame structures. 2. Remove (2) existing 230kV single circuit wood 3-pole structures. 3. Remove (1) existing 230kV single circuit steel 3-pole structure. 4. Remove (3) existing 230kV single circuit steel H-frame structures. 5. Remove (1) 230kV standard steel self-supporting switch structure. 6. Remove approx. 0.11 miles of 3-phase twin bundled (2) 636 ACSR (24/7) conductor. 7. Remove approx. 1.63 miles of 3-phase twin bundled (2) 721 ACAR (18/19) conductor. 8. Remove approx. 1.63 miles of two (2) 3#6 Alumoweld shield wire from structure. MODIFICATIONS TO EXISTING FACILITIES: 1. Replace (3) bundled conductor crossing strain insulator assemblies. 2. Replace (3) bundled conductor strain insulator assemblies. PERMANENT FACILITIES TO BE INSTALLED: 1. Install (8) 230kV custom engineered steel double circuit suspension structures on foundations as follows: a. Structures 2193/174-181 2. Install (3) 230kV custom engineered steel double circuit deadend structures on foundations as follows: a. Structures 2193/173, 182, and 186 3. Install (1) 230kV custom engineered steel double circuit deadend 2 pole structure on foundations as follows: a. Structure 2193/185 4. Install (2) 230kV custom engineered steel double circuit double deadend H-Frame structures on foundations as follows: a. Structures 2193/183 and 184A 5. Install (1) 230kV standard steel self-supporting switch structure on foundations as follows: a. Structure 2193/184 b. This includes the installation of (1) horizontally mounted, 4000-amp switch (219326) with HD interrupter bottles. 6. Install (1) set of 3-phase (2) 768.2 ACSS/TW/HS risers to connect the switch to the main line. a. This includes the installation of (1) set of 3-phase floating deadend assemblies to be installed 7. Install approx. 1.74 miles of 3-phase twin bundled (2) 768.2 ACSS/TW/HS conductor from structure 2193/171 to 2193/186A. 8. Install approx. 1.74 miles of two (2) DNO-11410 OPGW from structure 2193/172 to 2193/186. a. Assumes 6 OPGW splices throughout the line 9. Install approx. 0.11 miles of (1) 7#7 Alumoweld shield wire as follows: a. 0.07 miles from structure 2193/171 to 2193/172. b. 0.04 miles from structure 2193/186A. 10. Install approx. 0.11 miles of (1) DNO-11410 OPGW as follows: a. 0.07 miles from structure 2193/171 to 2193/172 b. 0.04 miles from structure 2193/186 to 2193/186A.
Right of way	Existing Right-of-Way shall be used.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$10,805,267.00
Component cost (in-service year)	$11,572,440.96

Substation Upgrade Component

Component title	Bremo Substation Terminal Equipment Upgrade (99-3450)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Bremo
Substation zone	363
Substation upgrade scope	Purchase & Install Substation Material: 1. One (1), 230kV, 4000A, 80kAIC, Circuit Breaker. 2. One (1), 230kV, 4000A, Double End Break Switch. 3. One (1), 230kV, 4000A, Center Break Switch. 4. Three (3), 180kV MO (S), 144kV MCOV, Surge Arresters. 5. Approximately 70FT of 5IN SCH 40 AL Tube Bus. 6. Conductor, connectors, control cable, conduit, steel, foundation, and grounding as required per engineering standards. Remove Substation Material: 1. One (1), 230kV, 2000A, SF6 Circuit Breaker. 2. Two (2), 230kV, 2000A Center Break Switch. 3. Three (3), 180kV MO (S), 144kV MCOV, Surge Arresters. 4. Approximately 70FT of 3 ½ IN SCH 40 AL Tube Bus. 5. Conductors, connectors, control cable, conduit, steel, foundation, and grounding as required per engineering standards. Purchase & Install Relay Material: 1. One (1), 1340 – 24” Dual SEL-411L CD/Fiber Line Panel 2. One (1), 1511 – 24” Single SEL-351 Transmission Breaker w/o Reclosing Panel 3. One (1), 4526_A – Circuit Breaker Fiber Optic Makeup Box 4. One (1), 4510 - SEL-2411 Equipment Annunciator 5. One (1), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 6. Two (2), Panel Retirements

Transformer Information

None

New equipment description	1. One (1), 230kV, 4000A, 80kAIC, Circuit Breaker. 2. One (1), 230kV, 4000A, Double End Break Switch. 3. One (1), 230kV, 4000A, Center Break Switch. 4. Three (3), 180kV MO (S), 144kV MCOV, Surge Arresters. 5. One (1), 1340 – 24” Dual SEL-411L CD/Fiber Line Panel 6. One (1), 1511 – 24” Single SEL-351 Transmission Breaker w/o Reclosing Panel 7. One (1), 4526_A – Circuit Breaker Fiber Optic Makeup Box 8. One (1), 4510 - SEL-2411 Equipment Annunciator 9. One (1), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers)
Substation assumptions	1. The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. 2. Relay Settings and P&C design will be revised as part of the SPE Scope of Work. 3. 4-hole pad connections must be replaced with 6-hole pad connections to maintain 4000A ratings. 4. Project 99-3429 is also occurring at Bremo Substation
Real-estate description	Substation is not being expanded.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$1,795,906.40
Component cost (in-service year)	$1,923,415.33

Substation Upgrade Component

Component title	Fork Union Substation Terminal Equipment Upgrade (99-3450)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Fork Union
Substation zone	363
Substation upgrade scope	Purchase & Install Substation Material: 1. One (1), 230kV, 4000A, 80kAIC, Circuit Breaker. 2. Four (4) 230kV, 4000A, Double End Break Switch, 3. Conductor, connectors, control cable, conduit, steel, foundation, and grounding as required per engineering standards. Remove Substation Material: 1. One (1), 230kV, 3000A, 63kAIC, Circuit Breaker. 2. Four (4), 230kV, 3000A Center Break Switch. 3. Conductors, connectors, control cable, conduit, steel, foundation, and grounding as required per engineering standards. Purchase & Install Relay Material: 1. One (1), 1340 – 24” Dual SEL-411L CD/Fiber Line Panel 2. One (1), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 3. One (1), Panel Retirements Reuse Relay Material: 1. One (1), 1510 – 24” Single SEL-351 Transmission Breaker w/ Reclosing Panel 2. One (1), 4526_A – Circuit Breaker Fiber Optic Makeup Box 3. One (1), 4510 - SEL-2411 Equipment Annunciator

Transformer Information

None

New equipment description	1. One (1), 230kV, 4000A, 80kAIC, Circuit Breaker. 2. Four (4) 230kV, 4000A, Double End Break Switch, 3. One (1), 1340 – 24” Dual SEL-411L CD/Fiber Line Panel 4. One (1), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers)
Substation assumptions	1. The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. 2. Relay Settings and P&C design will be revised as part of the SPE Scope of Work. 3. Project 99-3189 is also occurring at Fork Union Substation.
Real-estate description	Substation is not being expanded.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Component Cost Details - In Current Year $

Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$1,602,275.50
Component cost (in-service year)	$1,716,036.53

Transmission Line Upgrade Component

Component title	Lines 211/228 Rebuild - Chesterfield to Hopewell (99-3585)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line 211/228
Point A	Chesterfield
Point B	Hopewell
Point C	
Terrain description	The project is approximately 3 miles long in Chesterfield County, the Piedmont region. The area is mostly suburban with some densely populated sections. The project would not require any major road or waterway crossings. There are slight elevation changes along the route with the highest point being approximately 211 feet and the lowest being approximately 86 feet.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	2-768 ACSS/TW/HS
Hardware plan description	Existing hardware will be reused.

Tower line characteristics	The existing line consists mainly of 230 kV double circuit weathered steel monopoles built in 2020.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1573.000000
Winter (MVA)	1648.000000	1648.000000

Conductor size and type	2-768.2 ACSS/TW/HS (20/7) 250°C MOT
Shield wire size and type	Existing
Rebuild line length	2.75
Rebuild portion description	Existing Facilities to be Removed 1. 2.75 miles of 2-636 ACSR “ROOK” (2 circuits). Existing Facilities to be Transferred or Modified 1. Install a total of eighty-four (84) conductor suspension assemblies as follows: a. Six (6) each on structures 211/20 (228/20) – 211/33 (228/33). b. See Figure 2 for reference drawing 32.610. 2. Install a total of twelve (12) conductor dead-end assemblies as follows: a. Six (6) each on structures 211/19 (228/19) and 211/34 (228/34). b. See Figure 3 for reference drawing 32.630. 3. Install a total of twelve (12) conductor jumper post assemblies as follows: a. Six (6) each on structures 211/20 (228/20) and 211/33 (228/33). b. See Figure 4 for reference drawing 32.720. 4. Install a total of twelve (12) conductor jumper assemblies as follows: a. Six (6) each on structures 211/20 (228/20) and 211/33 (228/33). b. See Figure 5 for reference drawing 39.227. Permanent Facilities to be Installed: 1. 2.75 miles of 2-768 ACSS/TW/HS “Maumee” Conductor (2 circuits).
Right of way	No new Right of Way required.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Component Cost Details - In Current Year $

Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$6,340,260.00
Component cost (in-service year)	$6,790,418.00

Substation Upgrade Component

Component title	Chesterfield Substation Equipment Upgrade (99-3585)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Chesterfield
Substation zone	345
Substation upgrade scope	Purchase & Install Substation Material: 1. One (1), 230kV, 80kAIC, 4000A, SF6 Circuit Breakers. 2. Approximately 1200 FT 5 in. Sch. 40 AL tube bus. 3. Secondary CTs on branches 228T2326 and G6T211 (Detail engineering to verify with vendor) 4. Conductor, connectors, conduit, control cable, foundations, steel structures, and grounding material as necessary per engineering standards. Remove Substation Material: 1. One (1), 230kV, 50kAIC, 3000A, SF6 Circuit Breakers. 2. Approximately 1200 FT 3 ½ in. Sch. 40 AL tube bus. 3. Secondary CTs on branches 228T2326 and G6T211 (Detail engineering to verify with vendor) 4. Conductor, connectors, conduit, control cable, foundations, steel structures, and grounding material as necessary per engineering standards. Purchase & Install Relay Material: 1. One (1), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 2. One (1), 4526_A – Circuit Breaker or <84MVA TX Fiber Optic Makeup Box Reuse Substation Material: 1. One (1), 1510 – 24” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 2. One (1), 4510 – SEL-2411 Equipment Annunciator

Transformer Information

None

New equipment description	1. One (1), 230kV, 80kAIC, 4000A, SF6 Circuit Breakers. 2. Approximately 1200 FT 5 in. Sch. 40 AL tube bus. 3. Secondary CTs on branches 228T2326 and G6T211 (Detail engineering to verify with vendor) 4. One (1), 4551 – Axion Breaker Condition Monitor (for 230kV 80kA Circuit Breakers) 5. One (1), 4526_A – Circuit Breaker or <84MVA TX Fiber Optic Makeup Box
Substation assumptions	1. The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. 2. 4-hole pad connections must be replaced with 6-hole pad connections to maintain 4000A ratings. 3. Relay Settings and P&C design will be revised as part of the SPE Scope of Work. 4. This project coordinates with projects 99-3565, rebuilds lines 211/228 from Sycamore Springs to Hopewell, and 99-2651. Rebuilds lines 211/228 from Chesterfield Plant to structures 211/19 and 228/19. 5. It was determined that the GA would not need any additional equipment relocation thus it has been omitted from the submittal.
Real-estate description	Substation is not being expanded
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$1,496,808.20
Component cost (in-service year)	$1,603,081.37

Substation Upgrade Component

Component title	Sycamore Springs Substation Relay Reset (99-3585)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Sycamore Springs
Substation zone	345
Substation upgrade scope	Relay Resets Only

Transformer Information

None

New equipment description	N/A
Substation assumptions	1. The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. 2. 4-hole pad connections must be replaced with 6-hole pad connections to maintain 4000A ratings. 3. Relay Settings and P&C design will be revised as part of the SPE Scope of Work. 4. This project coordinates with projects 99-3565, rebuilds lines 211/228 from Sycamore Springs to Hopewell, and 99-2651. Rebuilds lines 211/228 from Chesterfield Plant to structures 211/19 and 228/19.
Real-estate description	Substation is not being expanded
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Component Cost Details - In Current Year $

Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$40,216.40
Component cost (in-service year)	$43,071.34

Transmission Line Upgrade Component

Component title	Line 565 Rebuild - Suffolk to Yadkin (99-3584)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line 565
Point A	Suffolk
Point B	Yadkin
Point C	
Terrain description	The project is approximately 13.2 miles long traversing Suffolk County and Chesapeake City in the Coastal Plains region. The area is mostly suburban with some densely populated sections. The project would not require any major road crossings, but a large portion of the line does go through The Dismal Swamp. There are slight elevation changes along the route with the highest point being approximately 101 feet and the lowest being approximately 6 feet.
Existing Line Physical Characteristics	
Operating voltage	500
Conductor size and type	2-2500 ACAR (84/7) Conductor [13.28 miles], 3-1351.5 ACSR (45/7) Conductor [0.15 miles]
Hardware plan description	New hardware will be used for line rebuild.
Tower line characteristics	Existing Structures will be removed and new structures will be used for this rebuild.
Proposed Line Characteristics	

	Designed	Operating

Voltage (kV)	500.000000	500.000000
	Normal ratings	Emergency ratings
Summer (MVA)	4357.000000	4357.000000
Winter (MVA)	5155.000000	5155.000000
Conductor size and type	3-1351 ACSS/TW/HS285 145°C MOT	
Shield wire size and type	DNO-10410 shield wire	
Rebuild line length	13.43 miles	
Rebuild portion description	Existing Facilities to be Removed: 1. (17) SC 500kV Suspension Weathering Steel Towers 2. (40) SC 500 kV Suspension Aluminum Towers 3. (3) SC 500 kV DDE Weathering Steel Towers 4. (2) SC 500kV Running Angle Weathering Steel Towers 5. 13.28 miles of 2-2500 ACAR (84/7) Conductor 6. 0.15 miles of 3-1351.5 ACSR (45/7) Conductor Permanent Facilities to be Installed 1. (57) 500kV Type 5-2KT Towers 2. (4) 5-2 3-Pole Dead-end 0-70° 3. (1) 5-2 3-Pole Dead-end 70-90° 4. 13.43 miles of 3-1351 ACSS/TW/HS285 5. 26.56 miles of DNO-10100 OPGW Existing Facilities to be Transferred or Modified 1. Install a total of eighteen (18) 500kV conductor dead-end assemblies as follows: a. Three (3) assemblies each on structures 565/190 and 565/255. b. Six (6) assemblies each on structures 565/253 and 565/254. 2. Install a total of nine (9) 500kV conductor jumper idler assemblies as follows: a. Three (3) assemblies on structure 565/253. b. Six (6) assemblies on structure 565/254. 3. Install a total of six (6) 500kV conductor jumper assemblies as follows: a. Three (3) assemblies each on structures 565/253 and 565/254. 4. Install a total of four (4) OPGW dead-end assemblies as follows: a. Two (2) assemblies each on structures 565/190 and 565/253.	
Right of way	Existing Right-of-Way shall be used.	
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
Component Cost Details - In Current Year $		
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.	

Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$68,861,360.00
Component cost (in-service year)	$73,750,517.00

Substation Upgrade Component

Component title	Suffolk Substation Terminal Equipment Upgrade (99-3584)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Suffolk
Substation zone	345
Substation upgrade scope	Purchase & Install Substation Material: 1. Two (2), 500 kV, 63kAIC, 5000A, SF6 Circuit Breakers. 2. Four (4), 500 kV, 5000A, Double end break switches. 3. Three (3), 396 kV, 318 kV MCOV Station Class Surge Arresters. 4. Three (3), 500 kV, Coupling Capacitor Voltage Transformers. 5. Approximately 250 FT of 6 IN. Sch. 80 AL tube Bus. 6. Conductor, connectors, conduit, control cable, foundations, steel structures, and grounding material as necessary per engineering standards. Remove Substation Material: 1. One (1), 500 kV, 40kAIC, 3000A, SF6 Circuit Breaker. 2. One (1), 500 kV, 50kAIC, 4000A, SF6 Circuit Breaker. 3. Four (4), 500 kV, 3000A, Double End Break Switches. 4. One (1), 500kV, 3000A, Wave Trap. 5. Three (3), 500 kV, Coupling Capacitor Voltage Transformers. 6. Approximately 250 FT 5 in. Sch. 40 AL tube bus. 7. Conductor, connectors, conduit, control cable, foundations, steel structures, and grounding material as necessary per engineering standards. Purchase & Install Relay Material: 1. Two (2), 4510 – SEL-2411 Equipment Annunciator 2. One (1), 1510 – 24” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 3. One (1),1515 – 24” Dual 500KV SEL-351 Transmission Breaker w/ Reclosing Panel 4. One (1), 1511 – SEL-351 Transmission Breaker w/o Reclosing Panel 5. One (1), 1516 – SEL-351 500kV Transmission Breaker w/o Reclosing Panel 6. Two (2), 4535 or 4536 – 500kV Circuit Breaker Condition Monitor 7. One (1), 1340 – Dual SEL-411L DCB/Fiber, CD/Fiber Line Panel (500kV w/ 2 Fiber Cables) 8. Two (2), 4526_D – C.B. w/ BCM Fiber Optic Makeup Box 9. One (1), 4506 – 3Ø CCVT Potential Makeup Box 10. Three (3), Panel Retirements

Transformer Information

None

New equipment description	1. Two (2), 500 kV, 63kAIC, 5000A, SF6 Circuit Breakers. 2. Four (4), 500 kV, 5000A, Double end break switches. 3. Three (3), 396 kV, 318 kV MCOV Station Class Surge Arresters. 4. Three (3), 500 kV, Coupling Capacitor Voltage Transformers. 5. Two (2), 4510 – SEL-2411 Equipment Annunciator 6. One (1), 1510 – 24” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 7. One (1),1515 – 24” Dual 500KV SEL-351 Transmission Breaker w/ Reclosing Panel 8. One (1), 1511 – SEL-351 Transmission Breaker w/o Reclosing Panel 9. One (1), 1516 – SEL-351 500kV Transmission Breaker w/o Reclosing Panel 10. Two (2), 4535 or 4536 – 500kV Circuit Breaker Condition Monitor 11. One (1), 1340 – Dual SEL-411L DCB/Fiber, CD/Fiber Line Panel (500kV w/ 2 Fiber Cables) 12. Two (2), 4526_D – C.B. w/ BCM Fiber Optic Makeup Box 13. One (1), 4506 – 3Ø CCVT Potential Makeup Box
Substation assumptions	1. The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. 2. 4-hole pad connections must be replaced with 6-hole and 8-hole connections to maintain 5000A ratings. 3. Relay Settings and P&C design will be revised as part of the SPE Scope of Work.
Real-estate description	Substation is not being expanded.
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Total component cost	$5,225,236.40
Component cost (in-service year)	$5,596,227.76

Substation Upgrade Component

Component title	Yadkin Substation Terminal Equipment Upgrade (99-3584)
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Yadkin
Substation zone	345
Substation upgrade scope	Purchase & Install Substation Material: 1. Conductor and connectors as necessary per engineering standards. Remove Substation Material: 1. One (1), 500kV, 5000A, Wave Trap. 2. Conductors, connectors, steel, foundation, and grounding as required per engineering standards. Purchase & Install Relay Material: 1. One (1), 1340 – Dual SEL 411L DCB/Fiber, CD/Fiber Line Panel. 2. One (1), Panel Retirement.

Transformer Information

None

New equipment description	1. One (1), 1340 – Dual SEL 411L DCB/Fiber, CD/Fiber Line Panel.
Substation assumptions	1. The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary. 2. 4-hole pad connections must be replaced with 6-hole and 8-hole connections to maintain 5000A ratings. 3. Relay Settings and P&C design will be revised as part of the SPE Scope of Work.
Real-estate description	Substation is not being expanded
Construction responsibility	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Benefits/Comments	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Component Cost Details - In Current Year $	
Engineering & design	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Permitting / routing / siting	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

ROW / land acquisition	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Materials & equipment	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction & commissioning	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Construction management	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Overheads & miscellaneous costs	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Contingency	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Total component cost	$236,920.00
Component cost (in-service year)	$253,741.32

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
2025W1-GD-LL15	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-LL16	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-LL13	314747	6BREMO	313867	6BREMODIST	1	230	345	Generation Deliverability	Included
2025W1-GD-LL14	313867	6BREMODIST	313707	6FORK UNION	1	230	345	Generation Deliverability	Included
2025W1-GD-S19	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-LL22	314303	6HOPEWLL	314286	6CHESTF A	1	230	345	Generation Deliverability	Included
2025W1-GD-LL24	314303	6HOPEWLL	314286	6CHESTF A	1	230	345	Generation Deliverability	Included
2025W1-GD-LL25	313373	6GRAPEVINE	314765	6MTEAGLE	1	230	345	Generation Deliverability	Included
2025W1-N1-ST7	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-GD-S132	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-S40	314303	6HOPEWLL	314286	6CHESTF A	1	230	345	Generation Deliverability	Included
2025W1-GD-S2	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2025W1-N1-ST13	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-ST12	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-ST11	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-GD-LL27	314303	6HOPEWLL	314286	6CHESTF A	1	230	345	Generation Deliverability	Included
2025W1-GD-S219	314303	6HOPEWLL	314286	6CHESTF A	1	230	345	Generation Deliverability	Included
2025W1-GD-S127	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-N1-LLT3	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-LLT4	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-LLT5	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-IPD-LL42	313867	6BREMODIST	314747	6BREMO	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL43	313707	6FORK UNION	313867	6BREMODIST	1	230	345	Individual Plant Deliverability	Included
2025W1-N1-LLT2	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-LLT40	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-LLT8	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-LLT9	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-ST110	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-GD-LL112	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-W21	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-W18	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-S11	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-N1-ST115	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-GD-LL11	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-N1-LLT11	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-GD-LL111	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-N1-LLT13	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-DOM-EOL1	N/A	N/A	N/A	N/A	N/A	500	345	End of Life	Included
2025W1-IPD-S22	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL13	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2025W1-IPD-LL14	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL15	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL16	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S31	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-N1-LLT29	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-IPD-S26	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S25	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S24	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-GD-S1	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-IPD-S23	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S28	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S27	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S33	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S32	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-N1-ST97	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-IPD-S36	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-N1-LLT34	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-IPD-S35	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S34	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-N1-LLT30	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-GD-LL9	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-N1-LLVM2NEW	289545	05YEAT230	289545	05YEAT230	1	230	345	N-1 Voltage Magnitude	Included
2025W1-N1-LLVM1NEW	289545	05YEAT230	289545	05YEAT230	1	230	345	N-1 Voltage Magnitude	Included
2025W1-IPD-LL2	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-GD-LL1NEW	313707	6FORK UNION	313373	6GRAPEVINE	1	230	345	Generation Deliverability	Included
2025W1-GD-LL33	314765	6MTEAGLE	314749	6CHARLVL	1	230	345	Generation Deliverability	Included
2025W1-GD-W68	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-LL8	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2025W1-GD-LL31	314303	6HOPEWLL	314286	6CHESTF A	1	230	345	Generation Deliverability	Included
2025W1-IPD-S11	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S10	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S9	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-GD-S3	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-S136	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-N1-ST30	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-GD-S135	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-N1-ST29	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-N1-ST33	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-IPD-LL10	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL11	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL12	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-GD-LL105	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-IPD-LL6	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL7	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL8	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL9	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-N1-ST34	314287	6CHESTF B	314276	6BASIN	1	230/230	345/345	N-1 Thermal	Included
2025W1-IPD-LL3	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL4	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-LL5	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S21	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S20	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S15	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S14	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-GD-S142	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-IPD-S13	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2025W1-IPD-S12	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-IPD-S19	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included
2025W1-GD-LL106	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-GD-LL108	314287	6CHESTF B	314276	6BASIN	1	230	345	Generation Deliverability	Included
2025W1-IPD-S16	314276	6BASIN	314287	6CHESTF B	1	230	345	Individual Plant Deliverability	Included

New Flowgates

The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Financial Information

Capital spend start date	01/2026
Construction start date	06/2028
Project Duration (In Months)	53

Additional Comments

None