

Line #2090 (Ladysmith CT - Fredericksburg) Rebuild

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	74
Project title	Line #2090 (Ladysmith CT - Fredericksburg) Rebuild
Project description	Wreck and rebuild line #2090 (Ladysmith CT to Fredericksburg) as a double circuit 230kV line using (2) 768.2 ACSS/TW (20/7) "MAUMEE" conductor with 3948A ampacity, 1573MVA. Only one circuit will be wired at this stage. Second circuit will be used for either rebuilding and conversion of line #47 or adding a new 230kV line if required. Upgrade circuit breaker leads, switches and line leads at Ladysmith CT and Fredericksburg, and upgrade circuit breakers at Fredericksburg.
Email	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Project in-service date	12/2027
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. Fredericksburg Substation Equipment Upgrade
2. Ladysmith CT Substation Equipment Upgrade
3. Line #2090 (Ladysmith CT - Fredericksburg) Rebuild

4. Mine Road Conductor Upgrade

Substation Upgrade Component

Component title	Fredericksburg Substation Equipment Upgrade
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Fredericksburg
Substation zone	353
Substation upgrade scope	Purchase and install substation material: 1. Two (2), 230kV, 4000A Center Break Switches. 2. One (1), 230kV, 63kAIC, 4000A, SF6 Circuit Breakers. 3. Approximately 300FT of 5 IN AL Tubular Bus and Connectors. 4. Foundations and steel structures as required. 5. Conductor, connectors, conduit, control cable, and grounding material as necessary per engineering standards. Purchase and install relay material: 1. One (1), 4510 - SEL-2411 Breaker Annunciator 2. One (1), 1510 – 28” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 3. One (1), 4514 – Circuit Breaker C.T. Makeup Box 4. One (1), 4526_A – Circuit Breaker Fiber Optic Makeup Box Remove Substation Material: 1. Two (2), 230KV 3000A Center Break Switches 2. One (1), 230KV 40kAIC, 3000A, SF6 Circuit Breaker

Transformer Information

None	
New equipment description	1. Two (2), 230kV, 4000A Center Break Switches. 2. One (1), 230kV, 63kAIC, 4000A, SF6 Circuit Breakers. 3. One (1), 4510 - SEL-2411 Breaker Annunciator 4. One (1), 1510 – 28” Dual SEL-351 Transmission Breaker w/ Reclosing Panel 5. One (1), 4514 – Circuit Breaker C.T. Makeup Box 6. One (1), 4526_A – Circuit Breaker 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 4-hole connections to maintain 4000A ratings. 3. 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	\$1,170,365.00
Component cost (in-service year)	\$1,253,460.92

Substation Upgrade Component

Component title	Ladysmith CT Substation Equipment Upgrade
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Ladysmith CT
Substation zone	355
Substation upgrade scope	Purchase and install substation material: 1. Four (4), 230kV, 4000A Center Break Switches. 2. Two (2), 230kV, 63kAIC, 4000A, SF6 Circuit Breakers. 3. Approximately 50FT of 5 IN AL Tubular Bus and Connectors. 4. Foundations and steel structures as required. 5. Conductor, connectors, conduit, control cable, and grounding material as necessary per engineering standards. Purchase and install relay material: 1. Two (2), 4510 - SEL-2411 Breaker Annunciator. 2. Two (2), 4514 – Circuit Breaker C.T. Makeup Box. 3. One (1), 4526_A – Circuit Breaker Fiber Optic Makeup Box. Remove Substation Material: 1. Four (4), 230KV 3000A Center Break Switches. 2. Two (2), 230KV 40kAIC, 3000A, SF6 Circuit Breakers.

Transformer Information

None	
New equipment description	1. Four (4), 230kV, 4000A Center Break Switches. 2. Two (2), 230kV, 63kAIC, 4000A, SF6 Circuit Breakers. 3. Two (2), 4510 - SEL-2411 Breaker Annunciator. 4. Two (2), 4514 – Circuit Breaker C.T. Makeup Box. 5. One (1), 4526_A – Circuit Breaker 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 connections to maintain 4000A ratings. 3. 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	\$1,493,771.80
Component cost (in-service year)	\$1,599,829.81
Transmission Line Upgrade Component	
Component title	Line #2090 (Ladysmith CT - Fredericksburg) Rebuild
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.

Impacted transmission line

Line #2090

Point A

Ladysmith CT

Point B

Fredericksburg

Point C

Terrain description

The project area is in the northern and central Virginia Piedmont regions with elevations ranging from approximately 100 to 300 feet. The terrain is predominately vegetated existing right-of-way and urban development consisting of moderate slopes. The line will cross three primary roads, several small streams, and the Matta, Po, and Ni Rivers.

Existing Line Physical Characteristics

Operating voltage

230

Conductor size and type

2-795 ACSR (26/7) 150°C MOT

Hardware plan description

New Hardware will be used.

Tower line characteristics

The existing structures consist of mostly wood type SC 2 poles built in 1991. The existing structures will be replaced with new steel monopoles for this line 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 shield wire

Rebuild line length

12.1 Miles

Rebuild portion description	<p>REMOVED FACILITIES: 1. One (1) existing double circuit and one (1) existing single circuit concrete H-Frame backbone structure. 2. Nine (9) existing single circuit wood 3-pole double deadend structures. 3. One (1) existing single circuit steel 3-pole double deadend structure. 4. Eighty-four (84) existing single circuit wood H-Frame suspension structures. 5. Seven (7) existing single circuit steel H-Frame suspension structures. 6. Four (4) self-supporting switch structures. 7. Four (4) existing single circuit steel H-Frame double deadend structures. 8. One (1) existing steel wave trap structure. 9. One (1) existing single circuit steel A-Frame backbone structure. 10. One (1) existing single circuit steel monopole deadend structure. 11. Approx. 17.3 miles of Line 2090 3-phase 2-795 ACSR (26/7) conductor between Fredericksburg Substation and Ladysmith CT. 12. Approx. 12.1 miles of one (1) DNO-8482 OPGW from str. 2090/1A to 2090/106. 13. Approx. 12.1 miles of one (1) 9AL-4AW/1AL OGPW from str. 2090/1A to 2090/106. 14. Line 2090 conductor strain, suspension, and jumper assemblies on the structures between str. 2090/107 (256/105) and Ladysmith CT. MODIFIED FACILITIES: 1. Transfer the existing OPGW fiber from the ahead side of existing str. 2090/106 to the ahead side of the new 2-pole steel structure. 2. On twenty-five (25) structures, replace three (3) V-string assemblies [32.850] 3. On eight (8) structures, replace six (6) strain assemblies [32.630] and three (3) jumper assemblies [39.227]. 4. On one (1) structure, replace three (3) strain assemblies [32.338]. INSTALLED FACILITIES: 1. Ninety-three (93) 230kV double circuit steel monopole suspension structures (12.612) on foundations. 2. Nine (9) 230kV double circuit steel monopole double deadend structures (12.614) on foundations. 3. One (1) 230kV double circuit 2-pole double deadend heavy angle structure (12.235) on foundations. 4. Two (2) 230kV single circuit backbone structures (12.905). 5. The self-supporting switch structures (12.830) as follows: a. Two (2) structures outside of Summit D.P. b. Two (2) structures outside of Mine Road Substation. 6. One (1) 230kV wave trap outside of Summit D.P. 7. Approx. 17.3 miles of Line 2090 3-phase 2-768.2 ACSS/TW/HS "Maumee" conductor between Fredericksburg Substation and Ladysmith CT. 8. Approx. 12.1 miles of two (2) DNO-11410 OPGW between Fredericksburg Substation and str. 2090/106. [Refer to 99-3183_Scope document for full Description]</p>
Right of way	No new or additional right of way is required to complete 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	\$54,582,674.00
Component cost (in-service year)	\$58,458,043.85

Substation Upgrade Component

Component title	Mine Road Conductor Upgrade
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Mine Road
Substation zone	355
Substation upgrade scope	Purchase and install substation material: 1. Line conductors and connectors, as per engineering standards. Purchase and install relay material: 1. No relay material (Relay Resets only).

Transformer Information

None	
New equipment description	None.
Substation assumptions	1. Relay Settings and protection & control design will be revised as part of the SPE scope of work. 2. 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.
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.
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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

\$94,891.80

Component cost (in-service year)

\$101,629.33

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-W124	313399	6MARS	313805	6SHELLHORN1	1	230	345	Winter Gen Deliv	Included
2022W3-N1-ST258	314004	6ASHBURN	314010	6BEAMEAD	1	230/230	345/345	Summer N-1	Included
2022W3-N1-ST253	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Summer N-1	Included
2022W3-GD-S1693	314006	6ASHBURA	314010	6BEAMEAD	1	230	345	Summer Gen Deliv	Included
2022W3-N1-ST252	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Summer N-1	Included
2022W3-GD-W123	313393	8MARS	313399	6MARS	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W42	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W43	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-N1-ST98	314009	6BRADOCK	314052	6IDYLWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1658	314084	6SULLY	314035	6DISCOVR	1	230	345	Summer Gen Deliv	Included
2022W3-N1-ST89	314009	6BRADOCK	314052	6IDYLWOD	1	230/230	345/345	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-ST91	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST21	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S169	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Summer Gen Deliv	Included
2022W3-GD-W138	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD_118	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Light Load Gen Deliv	Included
2022W3-GD-W49	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W138	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W82	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-GD_L310	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load Gen Deliv	Included
2022W3-GD-S170	313393	8MARS	313399	6MARS	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-W82	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-GD_117	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Light Load Gen Deliv	Included
2022W3-GD-S201	314041	6GLEBE	314185	6RADNOR	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S170	313393	8MARS	313399	6MARS	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S177	313393	8MARS	313399	6MARS	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S178	314901	8BATH CO	314991	8VALLEY SC	1	500	345	Summer Gen Deliv	Included
2022W3-GD-W136	314041	6GLEBE	314185	6RADNOR	1	230	345	Winter Gen Deliv	Included
2022W3-GD-W133	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-N1-ST107	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST108	313752	6TAKEOFF	313774	6LINC PRK	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST99	313399	6MARS	313746	6SOJOURNER	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S169	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S166	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S166	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S83	314041	6GLEBE	314185	6RADNOR	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S178	314039	6GALLOWS A	314052	6IDYLWOD	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S170	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S170	314072	6PL VIEW	314004	6ASHBURN	1	230	345	Summer Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-S1783	314925	8PL VIEW	314072	6PL VIEW	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S1708	314009	6BRADOCK	314052	6IDYLOWOD	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S1788	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-W57	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-N1-ST233	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD_L3593	314041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Light Load Gen Deliv	Included
2022W3-GD_L2763	314041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Light Load Gen Deliv	Included
2022W3-GD-W823	314041	6GLEBE	314185	6RADNOR	1	230	345	Winter Gen Deliv	Included
2022W3-GD-S1782	314991	8VALLEY SC	314926	8VALLEY	1	500	345	Summer Gen Deliv	Included
2022W3-N1-ST233	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1703	314035	6DISCOVR	313774	6LINC PRK	1	230	345	Summer Gen Deliv	Included
2022W3-N1-ST113	313399	6MARS	313746	6SOJOURNER	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S88	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-N1-ST113	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S89	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-N1-ST112	314009	6BRADOCK	314052	6IDYLOWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST233	314004	6ASHBURN	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST114	314039	6GALLOWS A	314052	6IDYLOWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST115	314068	6OX	314039	6GALLOWS A	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1712	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-W59	313393	8MARS	313399	6MARS	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-S3333	314010	6BEAMEAD	313743	6INTERCONNEC	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S1653	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-W60	313393	8MARS	313399	6MARS	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-S2043	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S1793	313746	6SOJOURNER	313822	6RUNWAY	1	230	345	Summer Gen Deliv	Included
2022W3-GD_L3603	314041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Light Load Gen Deliv	Included
2022W3-N1-ST130	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-W840	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W1370	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-N1-WT138	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-WT139	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-WT140	313752	6TAKEOFF	313774	6LINC PRK	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST128	314004	6ASHBURN	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST242	313815	6SPRINGH	314079	6RESTON	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-WT132	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST243	313805	6SHELLHORN1	313841	6ENTERPRIS	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST122	313815	6SPRINGH	314079	6RESTON	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1676	313904	6GOOSECRK	314006	6ASHBURA	1	230	345	Summer Gen Deliv	Included
2022W3-N1-WT133	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-WT134	313399	6MARS	313746	6SOJOURNER	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST125	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST126	314068	6OX	314039	6GALLOWS A	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S2103	314039	6GALLOWS A	314052	6IDYLWOD	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S1803	314934	8SPOTSYL	314916	8MORRSVL	1	500	345	Summer Gen Deliv	Included
2022W3-GD-S1722	313399	6MARS	313805	6SHELLHORN1	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S1798	313859	6BELMONT	314072	6PL VIEW	1	230	345	Summer Gen Deliv	Included
2022W3-N1-ST138	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST132	314035	6DISCOVR	313774	6LINC PRK	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-WT143	313399	6MARS	313746	6SOJOURNER	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST137	314068	6OX	314039	6GALLOWS A	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST173	314084	6SULLY	314035	6DISCOVR	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD_L2693	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load Gen Deliv	Included
2022W3-GD_L3093	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load Gen Deliv	Included
2022W3-N1-ST149	314009	6BRADOCK	314052	6IDYLWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST150	314009	6BRADOCK	314052	6IDYLWOD	1	230/230	345/345	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-WT163	14006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST31	313399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1803	13393	8MARS	313399	6MARS	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S1723	13815	6SPRINGH	314079	6RESTON	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S3473	13440	8VINTHIL	314913	8LOUDOUN	1	500	345	Summer Gen Deliv	Included
2022W3-N1-WT163	14006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-WT403	13399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-WT153	14006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST26	314010	6BEAMEAD	313743	6INTERCONN	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST147	14068	6OX	314039	6GALLOWS A	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST27	314041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST143	13805	6SHELLHORN1	314098	6GREENWAY1	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST28	314041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST163	14072	6PL VIEW	314004	6ASHBURN	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST163	14072	6PL VIEW	314004	6ASHBURN	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-LLT12	14041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Light Load N-1	Included
2022W3-GD-S2003	14939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-N1-LLT12	14041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Light Load N-1	Included
2022W3-N1-LLT12	14041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Light Load N-1	Included
2022W3-N1-ST36	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-WT163	14068	6OX	314039	6GALLOWS A	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST38	314084	6SULLY	314035	6DISCOVER	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1738	13399	6MARS	313746	6SOJOURNER	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S2223	13393	8MARS	313399	6MARS	1	500/230	345	Summer Gen Deliv	Included
2022W3-N1-ST163	13399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1739	14916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-N1-ST49	314035	6DISCOVER	313774	6LINC PRK	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST170	13399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	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-ST173	314039	6GALLOWS A	314052	6IDYLWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST173	313743	6INTERCONNEC	313733	6NIMBUS	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST174	314039	6GALLOWS A	314052	6IDYLWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-S1733	314004	6ASHBURN	314010	6BEAMEAD	1	230	345	Summer Gen Deliv	Included
2022W3-GD-W1593	313393	8MARS	313399	6MARS	1	500/230	345	Winter Gen Deliv	Included
2022W3-N1-ST164	313399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-W1473	313399	6MARS	313746	6SOJOURNER	1	230	345	Winter Gen Deliv	Included
2022W3-N1-WT553	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-W1393	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-N1-WT573	314010	6BEAMEAD	313743	6INTERCONNEC	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-ST483	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-WT173	314004	6ASHBURN	314010	6BEAMEAD	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-LD-ST103	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Load Deliverability	Included
2022W3-N1-ST603	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST613	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-WT743	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-LD-ST9	314290	6EDFERRY	313911	6TWINCREEKS	1	230/230	345/345	Load Deliverability	Included
2022W3-N1-ST553	313399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST176	314072	6PL VIEW	314004	6ASHBURN	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-W1633	314004	6ASHBURN	314010	6BEAMEAD	1	230	345	Winter Gen Deliv	Included
2022W3-GD-W1403	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-N1-LLT33	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load N-1	Included
2022W3-N1-LLT33	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load N-1	Included
2022W3-N1-LLT33	314820	6BALLSTN	314120	6CLRNDNC	1	230/230	345/345	Light Load N-1	Included
2022W3-N1-ST663	314009	6BRADOCK	314052	6IDYLWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-W991	242701	05LEESVI	314667	4ALTVSTA	1	138	205/345	Winter Gen Deliv	Included
2022W3-N1-ST673	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST683	314072	6PL VIEW	314004	6ASHBURN	1	230/230	345/345	Summer N-1 Thermal	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-W99	242701	05LEESVI	314667	4ALTVSTA	1	138	205/345	Winter Gen Deliv	Included
2022W3-N1-WT9	2314072	6PL VIEW	314004	6ASHBURN	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-S18	1313805	6SHELLHORN1	313841	6ENTERPRIS	1	230	345	Summer Gen Deliv	Included
2022W3-N1-WT9	4313399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-W19	213805	6SHELLHORN1	314098	6GREENWAY1	1	230	345	Winter Gen Deliv	Included
2022W3-GD-W88	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-N1-ST77	313399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-W75	313399	6MARS	313805	6SHELLHORN1	1	230	345	Winter Gen Deliv	Included
2022W3-N1-ST78	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-W87	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W18	314991	8VALLEY SC	314926	8VALLEY	1	500	345	Winter Gen Deliv	Included
2022W3-N1-WT89	313399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-W76	313904	6GOOSECRK	314006	6ASHBURA	1	230	345	Winter Gen Deliv	Included
2022W3-GD-W10	313440	8VINTHIL	314125	6VINTHIL	2	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W77	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W87	313393	8MARS	313399	6MARS	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W15	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W79	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Winter Gen Deliv	Included
2022W3-GD-W79	314290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Winter Gen Deliv	Included
2022W3-GD-S18	1314918	8NO ANNA	314911	8LADYSMITH	1	500	345	Summer Gen Deliv	Included
2022W3-N1-WT9	7313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-WT10	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-S18	1314068	6OX	314039	6GALLOWS A	1	230	345	Summer Gen Deliv	Included
2022W3-GD-W89	313393	8MARS	313399	6MARS	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W89	313393	8MARS	313399	6MARS	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W94	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-GD-W92	314006	6ASHBURA	314010	6BEAMEAD	1	230	345	Winter Gen Deliv	Included
2022W3-GD-S18	2013440	8VINTHIL	314913	8LOUDOUN	1	500	345	Summer Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-WT109	313399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-N1-WT110	313399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-S2363	313393	8MARS	313399	6MARS	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S2373	313393	8MARS	313399	6MARS	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-W103	314072	6PL VIEW	314004	6ASHBURN	1	230	345	Winter Gen Deliv	Included
2022W3-N1-WT127	314006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-W904	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-N1-ST185	313399	6MARS	313746	6SOJOURNER	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST186	313399	6MARS	313746	6SOJOURNER	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST187	314039	6GALLOWS A	314052	6IDYLWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-W98	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Winter Gen Deliv	Included
2022W3-N1-ST179	314039	6GALLOWS A	314052	6IDYLWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-GD-W125	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-LD-ST24	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Load Deliverability	Included
2022W3-GD-W12	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-GD-W14	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-LD-ST26	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Load Deliverability	Included
2022W3-GD-S176	314068	6OX	314039	6GALLOWS A	1	230	345	Summer Gen Deliv	Included
2022W3-GD-W13	313440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-LD-ST25	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Load Deliverability	Included
2022W3-GD-S168	314925	8PL VIEW	314072	6PL VIEW	1	500/230	345	Summer Gen Deliv	Included
2022W3-LD-ST28	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Load Deliverability	Included
2022W3-GD-S168	313399	6MARS	313805	6SHELLHORN1	1	230	345	Summer Gen Deliv	Included
2022W3-LD-ST27	314939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345/345	Load Deliverability	Included
2022W3-GD-W136	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-LD-ST23	313904	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Load Deliverability	Included
2022W3-N1-ST19	314009	6BRADOCK	314052	6IDYLWOD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST19	313746	6SOJOURNER	313822	6RUNWAY	1	230/230	345/345	Summer N-1 Thermal	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-W783	314916	8MORRSVL	313440	8VINTHIL	1	500	345	Winter Gen Deliv	Included
2022W3-N1-WT243	14041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-S1763	13805	6SHELLHORN1	314098	6GREENWAY1	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S1683	14916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-N1-WT253	14041	6GLEBE	314185	6RADNOR	1	230/230	345/345	Winter N-1 Thermal	Included
2022W3-GD-S1217	14290	6EDFERRY	313911	6TWINCREEKS	1	230	345	Summer Gen Deliv	Included
2022W3-GD-S1768	14939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S1418	14939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S1767	14939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S1768	14939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S1468	14939	8GOOSE CREEK	313904	6GOOSECRK	1	500/230	345	Summer Gen Deliv	Included
2022W3-GD-S2018	14916	8MORRSVL	313440	8VINTHIL	1	500	345	Summer Gen Deliv	Included
2022W3-N1-ST206	13399	6MARS	313746	6SOJOURNER	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST85	13399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST207	14004	6ASHBURN	314010	6BEAMEAD	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST86	13399	6MARS	313805	6SHELLHORN1	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST87	13394	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST208	13746	6SOJOURNER	313822	6RUNWAY	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST88	13394	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-LD-ST30	133911	6TWINCREEKS	314072	6PL VIEW	1	230/230	345/345	Load Deliverability	Included
2022W3-GD-W319	13440	8VINTHIL	314913	8LOUDOUN	1	500	345	Winter Gen Deliv	Included
2022W3-LD-ST29	134072	6PL VIEW	314004	6ASHBURN	1	230/230	345/345	Load Deliverability	Included
2022W3-LD-ST32	134006	6ASHBURA	314010	6BEAMEAD	1	230/230	345/345	Load Deliverability	Included
2022W3-LD-ST31	133911	6TWINCREEKS	314072	6PL VIEW	1	230/230	345/345	Load Deliverability	Included
2022W3-LD-ST33	134004	6ASHBURN	314010	6BEAMEAD	1	230/230	345/345	Load Deliverability	Included
2022W3-N1-ST81	134068	6OX	314039	6GALLOWS A	1	230/230	345/345	Summer N-1 Thermal	Included
2022W3-N1-ST83	13394	6GOOSECRK	314006	6ASHBURA	1	230/230	345/345	Summer N-1 Thermal	Included

New Flowgates

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

Financial Information

Capital spend start date	06/2025
Construction start date	12/2026
Project Duration (In Months)	30

Additional Comments

Please contact Chibu Ofoegbu at 267-221-1207 or chibuzor.i.foegbu@dominionenergy.com for any questions.