

# Line #2114 - Reconductor Remington CT to Gainesville - Full and Upgrade Terminal Equipment at Remington CT and Gainesville

## 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	333
Project title	Line #2114 - Reconductor Remington CT to Gainesville - Full and Upgrade Terminal Equipment at Remington CT and Gainesville
Project description	Proposal 99-2905~99-2931 - 2 increases the ampacity of Line 2114 between Remington CT and Gainesville (Remington CT - Elk Run - Gainesville) to a summer rating of 1574 MVA by fully reconductoring the line and upgrading the breakers and terminal equipment at Remington CT and Gainesville to achieve a 4000 A single breaker rating. This project has a full overlap with Supplemental Project #s2340.1 and s2340.2, presented at 06/08/2021 TEAC meeting, with the addition of the breaker replacements at Remington CT and Gainesville.
Email	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Project in-service date	06/2026
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. Uprate Line #2114 line segment from Remington CT to Rollins Ford - Full ...

2. Uprate Line #2114 line segment from Rollins Ford to Gainesville - Full R...
3. Remington CT Terminal Equipment
4. Gainesville Terminal Equipment
5. Rollins Ford Substation Relay Resets
6. Brambleton Substation Breaker Replacement

## Transmission Line Upgrade Component

Component title	Uprate Line #2114 line segment from Remington CT to Rollins Ford - Full Reconductor
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line #2114 - Remington CT to Gainesville
Point A	Remington CT
Point B	Elk Run
Point C	Rollins Ford
Terrain description	Starting at Remington CT located the City of Remington, the terrain of the existing right-of-way (ROW) generally flat and characterized by farmland. Just east of Remington CT, the ROW travels through a small marsh. The ROW travels through very rural areas with agricultural and scattered residential properties. The ROW aerially crosses Route 17 between 2114/14 and 2114/15 and the terrain remains relatively flat as the ROW enters Elk Run DP. The ROW is extremely open as it navigates due north toward Gainesville Substation. The ROW crosses from Fauquier County into Prince William County between structures 2114/88 and 2114/89 and then immediately aerially crosses Cedar Run. The Prince William County Public Safety Training Center occupies the ROW near Kings Crossroads and then immediately aerially crosses a Norfolk Southern Railway easement before Nokesville Substation. There are then two aerial crossings, one of South Run and one of Kettle Run, before heading past Vint Hill Substation. The ROW remains flat and increased residential properties dominate the adjacent properties. The ROW aerially crosses Broad Run between structures 2114/128 and 2114/129 and then Rocky Branch between structures 2114/129 and 2114/130. Some moderate slopes are present along the ROW. The ROW transects multiple industrial parks as it heads into Gainesville Substation Civil: Route 17, Prince William County Public Safety Training Center, Norfolk Southern Railroad, Waterbody: Cedar Run, South Run, Kettle Run, Broad Run Rocky Branch

## Existing Line Physical Characteristics

Operating voltage	230 kV
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Conductor size and type	2-636 ACSR (24/7) 150 Deg C
Hardware plan description	Existing line hardware will not be reused.
Tower line characteristics	Existing structures for this transmission line are ten years old or less and do not need to be replaced as part of the reconductor project; however, lifts will be installed on fifty-one (51) towers to raise structure height. This is required to maintain adequate ground clearances and clearances between Line 535 and Line 2114/2222. This work will reuse the existing foundations.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1574.000000	1574.000000
Winter (MVA)	1650.000000	1650.000000
Conductor size and type	2-768.2 ACSS/TW 250 Deg C MOT	
Shield wire size and type	Shield wire unchanged	
Rebuild line length	23.31 miles (Reconductor)	
Rebuild portion description	<p>Removals: 1) Remove approximately 3.46 miles of 3-Phase 2-636 ACSR conductor between Remington Ct and Elk Run. 2) Remove approximately 19.71 miles of 3-Phase 2-636 ACSR conductor between Elk Run and Rollins Ford. 3) Remove approximately 0.14 miles of 3-Phase 2-636 ACSR conductor between switch 211419 and 211416 at Elk Run. 4) Remove 3000A switches (21149 and 211416) at Elk Run. 5) Remove one (1) DC 3-Pole Structure (Str. 535/163, 2114/24).  Installations: 1) Install approximately 3.46 miles of 3-Phase 2-768 ACSS/TW (20/7) conductor between Remington Ct and Elk Run. 2) Install approximately 19.71 miles of 3-Phase 2-768 ACSS/TW (20/7) conductor between Elk Run and Rollins Ford. 3) Install approximately 0.14 miles of 3-Phase 2-768 ACSS/TW (20/7) conductor between switch 211419 and 211416 at Elk Run. 4) Install two (2) 4000A switches at Elk Run. 5) Install one (1) DC 3-Pole Structure (Str. 535/163, 2114/24). 6) Install lifts on fifty-one (51) towers to raise structure height. This is required to maintain adequate ground clearances and clearances between Line 535 and Line 2114/2222. This work will reuse the existing foundations.</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.
<b>Component Cost Details - In Current Year \$</b>	
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	\$28,648,410.00
Component cost (in-service year)	\$30,682,446.00

**Transmission Line Upgrade Component**

Component title	Uprate Line #2114 line segment from Rollins Ford to Gainesville - Full Reconductor
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line #2114 - Remington CT to Gainesville
Point A	Rollins Ford (s2340, TD 12/31/2021)
Point B	Gainesville
Point C	

Terrain description

Starting at Remington CT located the City of Remington, the terrain of the existing right-of-way (ROW) generally flat and characterized by farmland. Just east of Remington CT, the ROW travels through a small marsh. The ROW travels through very rural areas with agricultural and scattered residential properties. The ROW aerially crosses Route 17 between 2114/14 and 2114/15 and the terrain remains relatively flat as the ROW enters Elk Run DP. The ROW is extremely open as it navigates due north toward Gainesville Substation. The ROW crosses from Fauquier County into Prince William County between structures 2114/88 and 2114/89 and then immediately aerially crosses Cedar Run. The Prince William County Public Safety Training Center occupies the ROW near Kings Crossroads and then immediately aerially crosses a Norfolk Southern Railway easement before Nokesville Substation. There are then two aerial crossings, one of South Run and one of Kettle Run, before heading past Vint Hill Substation. The ROW remains flat and increased residential properties dominate the adjacent properties. The ROW aerially crosses Broad Run between structures 2114/128 and 2114/129 and then Rocky Branch between structures 2114/129 and 2114/130. Some moderate slopes are present along the ROW. The ROW transects multiple industrial parks as it heads into Gainesville Substation Civil: Route 17, Prince William County Public Safety Training Center, Norfolk Southern Railroad, Waterbody: Cedar Run, South Run, Kettle Run, Broad Run Rocky Branch

### Existing Line Physical Characteristics

Operating voltage

230 kV

Conductor size and type

2-636 ACSR (24/7) 150 Deg C and 2-768.2 ACSS/TW/HS 250 Deg C MOT

Hardware plan description

Existing line hardware will not be reused.

Tower line characteristics

Existing structures for this transmission line are ten years old or less and do not need to be replaced as part of the reconductor project; however, lifts will be installed on two (2) towers to raise structure height. This is required to maintain adequate ground clearances and clearances between Line 535 and Line 2114/2222. This work will reuse the existing foundations.

### Proposed Line Characteristics

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1574.000000	1574.000000
Winter (MVA)	1650.000000	1650.000000

Conductor size and type	2-768.2 ACSS/TW 250 Deg C MOT
Shield wire size and type	Shield wire unchanged
Rebuild line length	1.11 miles (Reconductor)
Rebuild portion description	Removals: 1) Remove approximately 1.11 miles of 3-Phase 2-636 ACSR conductor between Rollins Ford and Gainesville. Installations: 1) Install approximately 1.11 miles of 3-Phase 2-768 ACSS/TW (20/7) conductor between Rollins Ford and Gainesville. 2) Install lifts on two (2) towers to raise structure height. This is required to maintain adequate ground clearances and clearances between Line 535 and Line 2114/2222. This work will reuse the existing foundations.
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.
<b>Component Cost Details - In Current Year \$</b>	
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	\$.00
Component cost (in-service year)	\$.00
<b>Substation Upgrade Component</b>	
Component title	Remington CT Terminal Equipment

Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Remington CT
Substation zone	352
Substation upgrade scope	Purchase and install: 1. One (1) 230 kV, 4000 A wave trap. 2. Two (2) 230 kV, 4000 A, 63kA Circuit Breakers. 3. Four (4) 230 kV, 4000A center break switches horizontally mounted. 4. One (1), 230 kV, 3-phase, Gang Operated Integrated Earthing Switch. 5. One (1), MOAB 6. Risers conductors, connectors, insulators, and grounding materials as per engineering standards.

**Transformer Information**

None	
New equipment description	Purchase & Install Substation Material: 1) One (1) 230 kV, 4000 A wave trap 2) Two (2) 230 kV, 4000 A 63 kA circuit breakers 3) Four (4) 230 kV, 4000 A center break switches horizontally mounted 4) Risers conductors, connectors, insulators, and grounding materials as per engineering standards. Purchase and install relay material: 1. One (1), 4546 – Earthing Switch MOAB M.U. Box
Substation assumptions	All work will be within existing station footprint.
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	\$1,091,539.00
Component cost (in-service year)	\$1,169,038.00

**Substation Upgrade Component**

Component title	Gainesville Terminal Equipment
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Gainesville
Substation zone	352
Substation upgrade scope	Upgrade (2) 230 kV breakers (H3T2114 and 2114T2161), as well as breaker switches, breaker leads and line leads at Gainesville to ensure a 4000 A single breaker rating. Purchase & Install Substation Material: 1) Two (2) 230 kV, 4000 A 63 kA Circuit Breakers (GIS hybrid breakers with switches) 2) Four (4) 230 kV, 4000 A switches horizontally mounted (built into GIS Breakers) 3) Risers conductors, connectors, insulators, and grounding materials as per engineering standards

**Transformer Information**

None	
New equipment description	1) Two (2) 230 kV, 4000 A 63 kA Circuit Breakers (GIS hybrid breakers with switches) 2) Four (4) 230 kV, 4000 A switches horizontally mounted (built into GIS Breakers) 3
Substation assumptions	No additional relay material will be needed.
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	\$8,249,243.00
Component cost (in-service year)	\$8,834,938.00

### **Substation Upgrade Component**

Component title	Rollins Ford Substation Relay Resets
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Rollins Ford
Substation zone	352
Substation upgrade scope	System Protection Engineering Coordination Study and System Protection Technician relay resets ONLY.

### **Transformer Information**

None	
New equipment description	No new equipment required for this proposal.
Substation assumptions	No additional relay equipment required for this proposal.
Real-estate description	The substation will not be expanded for this proposal.
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	\$11,417.00
Component cost (in-service year)	\$12,228.00

### Substation Upgrade Component

Component title	Brambleton Substation Breaker Replacement
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Brambleton
Substation zone	352
Substation upgrade scope	Install: 1. Three (3) 230 kV, 4000 A, 80KA Circuit Breakers 2. One (1) 230 kV, 4000 A, 80KA Sync Close Circuit Breakers 3. Conductors, foundation, conduit, and grounding materials as per engineering standards. Install relay material: 1. One (1), 4526_A – Circuit Breaker Fiber Optic M.U. Box

### Transformer Information

None	
New equipment description	1. Three (3) 230 kV, 4000 A, 80KA Circuit Breakers 2. One (1) 230 kV, 4000 A, 80KA Sync Close Circuit Breakers

Substation assumptions

Replacement breakers will fit within the footprint of the existing breakers.

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

\$1,692,192.00

Component cost (in-service year)

\$1,812,338.00

### **Congestion Drivers**

None

### **Existing Flowgates**

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
N1-ST49	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer N-1 Thermal	Included
GD-S715	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer Gen Deliv	Included
GD-S37	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer Gen Deliv	Included

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
GD-S717	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer Gen Deliv	Included
GD-S12	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer Gen Deliv	Included
GD-S17	314110	6ELK RUN	314037	6GAINSVL	1	230	345	Summer Gen Deliv	Included

## New Flowgates

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

## Financial Information

Capital spend start date 06/2024

Construction start date 03/2025

Project Duration (In Months) 24

## Additional Comments

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