Line #588 Yadkin-Fentress EOL 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	367
Project title	Line #588 Yadkin-Fentress EOL Rebuild
Project description	This project serves to rebuild approximately13.51 miles of 500 kV line 588 from structure 588/184 inside Yadkin Substation to structure 588/254 outside of Fentress Substation. In addition, there will be a rearrangement of Line 565 at Yadkin substation to create room for the additional Line 5XX circuit. The 5XX scope is associated with a different project. For this rebuild, the existing structures shall be replaced one for one within the existing ROW, using custom engineered steel poles that allows for the construction of a second 500 kV line, 5XX, being built within the same ROW as part of the scope for a different project. Line #588 will be rebuilt with 3-phase triple bundled 1351.5 ACSR (45/7) “Dipper” conductor and two (2) DNO-10100 shield wire.
Email	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Project in-service date	06/2028
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 #588 Yadkin-Fentress EOL Rebuild

2. Yadkin Substation Equipment Upgrade

3. Fentress Substation

Transmission Line Upgrade Component

Component title	Line #588 Yadkin-Fentress EOL Rebuild
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Impacted transmission line	Line #588
Point A	Yadkin
Point B	Fentress
Point C	
Terrain description	The project area is in the eastern Virginia Tidewater region with elevations ranging from approximately 9 to 25 feet. The terrain is predominately vegetated existing right-of-way with several areas of dense residential development consisting of minimal slopes. The line will include new crossings of Routes 168 and 17, Interstate 64, and the Intercoastal Waterway/Great Dismal Canal within existing right-of-way.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	2-2500 ACAR (84/7) 90°C MOT [13.66 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	3-1351.5 ACSR (45/7) 110°C MOT [13.51 Miles]	
Shield wire size and type	(2) DNO-10100 Shield Wire	
Rebuild line length	13.51 Miles	
Rebuild portion description	EXISTING FACILITIES TO BE REMOVED: 1. Remove fifty-three (53) existing single circuit steel suspension towers as follows: a. Fifty-two (52) 5LT towers as the following: 588/187, 190, 192-195, 199-210, 212-225, 227-229, 231-232, 234-236, 238-239, 241-243, 246-248, and 250-253 b. One (1) 5MT tower as the following: 588/245 2. Remove ten (10) existing single circuit steel running angle towers as follows: a. Six (6) 5LA towers as the following: 588/186, 196, 198, 211, 230, and 233 b. Four (4) 5MA towers as the following: 588/188, 237, 240, and 249 3. Remove five (5) existing single circuit steel double deadend towers as follows: a. Two (2) 5DE towers as the following: 588/191, 588/244 b. Three (3) 5HA towers as the following: 588/189, 197, and 226 4. Remove approximately 27.02 miles of 7#7 Alumoweld shield wire from structure 588/184 to structure 588/254. 5. Remove approximately 13.51 miles of 2-2500 ACAR (84/7) conductor from existing structure 588/185 to 588/254. MODIFICATIONS TO EXISTING FACILITIES: 1. Install three (3) new conductor strain assemblies and two (2) new OPGW strain assemblies on the following two (2) structures: a. Existing structure 588/184 and 588/254 PERMANENT FACILITIES TO BE INSTALLED: 1. Install fifty-two (52) 500 kV steel single circuit suspension monopole (15.200) on foundations as follows: a. Structures 588/187, 190, 192-195, 199-210, 212-222, 224-225, 227-232, 234-236, 238239, 241-243, 245-248, and 250-252 2. Install ten (10) 500 kV steel single circuit double deadend small angle monopole (15.210) on foundations as follows: a. Structures 588/186, 188, 196, 198, 211, 223, 233,237, 240, and 249 3. Install two (2) 500 kV steel single circuit double deadend large angle monopoles (15.212) on foundations as follows: a. Structures 588/185, 253 4. Install five (5) 500 kV steel single circuit engineered double deadend large angle 2-pole on foundations as follows: a. Structures 588/189, 191, 197, 226, and 244 5. Install approximately 13.51 miles of 3-phase 3-1351.5 ACSR “Dipper” (45/7) 110 MOT conductor from structure 588/184 to 588/254. 6. Install approximately 13.51 miles of two (2) DNO-10100 shield wire from structure 588/184 to 588/254. a. This includes splices on structures 588/184, 198, 211, 226, 237, and 254. b. Custom reel lengths will be needed. It is assumed that this will be accounted for in the detailed design.	
Right of way	New right of way or acquisition would be required from publicly-owned property, specifically the City of Chesapeake outside of Fentress Substation.	
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	$78,597,278.00
Component cost (in-service year)	$84,177,685.00

Substation Upgrade Component

Component title	Yadkin Substation Equipment Upgrade
Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Yadkin
Substation zone	366
Substation upgrade scope	Purchase & Install Substation Material: 1. Three (3), 396kV, 318kV MCOV Station Class Arrestor 2. Approximately 900 FT of 6 IN SCH. 80 Tubular Bus 3. Conductors, connectors, insulators, conduit, control cable, foundations, steel structures, trench, and grounding connections as per engineering standards. Remove Substation Material: 1. One (1), 500kV, 4000A Wave Trap Purchase & Install Relay Material: 1. Retire one (1), Panel (#23) 2. One (1), 1340 – 24” Dual SEL-411L DCB/Fiber, CD/Fiber Line Panel (500kV w/ 2 Fiber Cables)

Transformer Information

None

New equipment description	1. Three (3), 396kV, 318kV MCOV Station Class Arrestor 2. Approximately 900 FT of 6 IN SCH. 80 Tubular Bus 3. Conductors, connectors, insulators, conduit, control cable, foundations, steel structures, trench, and grounding connections as per engineering standards. 4. Retire one (1), Panel (#23) 5. One (1), 1340 – 24” Dual SEL-411L DCB/Fiber, CD/Fiber Line Panel (500kV w/ 2 Fiber Cables)
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 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	$961,762.00
Component cost (in-service year)	$1,030,047.10

Substation Upgrade Component

Component title	Fentress Substation

Project description	The redacted information is proprietary to the Company; therefore, it is privileged and confidential.
Substation name	Fentress
Substation zone	366
Substation upgrade scope	Purchase and install the following substation material: 1. None Purchase and install relay material: 1. Convert Existing SEL-441L Line Panel to DCB/Fiber, CD/Fiber Line Panel Remove the following substation material: 1. One (1), 500kV, 5000A Wave Trap

Transformer Information

None

New equipment description	1. Convert Existing SEL-441L Line Panel to 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 pad 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	$139,618.00
Component cost (in-service year)	$149,530.88

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
2023W2-DOM-O1	314909	8FENTRES	314927	8YADKIN	1	500	345	FERC 715	Included

New Flowgates

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

Financial Information

Capital spend start date	12/2024
Construction start date	06/2026
Project Duration (In Months)	42

Additional Comments

None