Install 5MW Battery Energy Storage System (BESS) at Louisa CT switching station

General Information

Proposing entity name	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	309
Project title	Install 5MW Battery Energy Storage System (BESS) at Louisa CT switching station
Project description	Proposal 17 is to install 5MW battery energy storage device at Louisa 230 kV switching station.
Project in-service date	06/2023
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. Louisa CT Switching Station 5 MW Battery Energy Storage Systems Installa...

Substation Upgrade Component

Component title	Louisa CT Switching Station 5 MW Battery Energy Storage Systems Installation
Substation name	Louisa CT Switching Station
Substation zone	193

Substation upgrade scope	Install a 5 MW Battery Bank at Louisa CT Switching Station. The scope includes one 230-34.5 kV Transformer and two branches of 2 MW BESS and one branch of 1 MW BESS. Each string consists of a 34.5 kV Circuit Breaker, associated switches, underground getaway, 34.5 kV-480V Pad mount Transformer, DC-AC converter/inverter, two (2) MW battery trailers, and one (1) MW battery trailer. This project will require installation of a 230 kV Circuit Breaker, 230 kV Circuit Switcher and Motor Operated Switch on high side of the transformer. The station service will be relocated within the station to create room for the transformer connection. The Control Enclosure will be expanded to accommodate the new relay panels. Substation expansion will be required for the installation of the new transformer and battery trailers. In addition, two (2) new galvanized steel static poles and foundations and three spans (approximately 800 feet) of 7#7 Alumoweld shield wire tying in the new static poles to the existing backbone will be added.

Transformer Information

	Name	Capacity (MVA)	
Transformer	TBD	22.4	
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	230	34.5	N/A

New equipment description	Purchase and install substation material: 1. One (1), 230-34.5 kV, 22.4 MVA, Transformer 2. Three (3), 180 kV, 144 kV MCOV surge arresters 3. Three (3), 30 kV, 24.4 kV MCOV surge arresters 4. Three (3), 2.5 MVA, 34.5 kV-480V, Y-Y Pad mount Transformers 5. Three (3), 34.5 kV, 2000A, 25 kA Circuit Breakers 6. Twenty-four (24), 34.5 kV, 1200A Hook-stick Disconnect Switches 7. Nine (9), 30 kV, 24.4 kV MCOV surge arresters 8. Three (3), 34.5 kV Distribution bays 9. Three (3), 34.5 kV Getaway stand and foundation 10. One (1), 230kV, 3000A, 50 kA Circuit Breaker 11. One (1), 230kV, 1200A, 40 KAIC Circuit Switcher 12. One (1), Motor Operator, 20 IN-LB 13. One (1), 230 kV CCVT, Relay Accuracy 14. Three (3), 34.5 kV PT, Relay Accuracy 15. Three (3), 34.5 kV, SMD-20 fuses with appropriate fuse links 16. Three (3), 23 kV, 12A current limiting fuses 17. Oil Containment for the Transformers 18. Two (2), 2 MW Battery Trailers 19. One (1), 1 MW Battery Trailer 20. Three (3), 2 MW Inverter/Rectifier Units 21. Expand the Substation Control Enclosure by 10 FT. 22. Nine (9), Bushing CTs, Pad Mount TX low side 23. Relocation of driveway and miscellaneous equipment 24. Substation Expansion- Site preparation, grading, ground grid, fencing as required 25. Conductors, connectors, foundations, structural steel, grounding, conduits, power cables, control cables, as per Dominion Standards 26. Install two (2) new Galvanized Steel Static Pole (9.008) and foundation at the expanded Louisa CT Switching Substation 27. Install three spans (approximately 800 feet) of 7#7 Alumoweld shield wire tying in the new static poles to the existing backbone.
Substation assumptions	N/A

Real-estate description	The station footprint will be expanded to accommodate the new equipment. Please review section A.1 Right-of-way land acquisition plan and approach in the attached Proposal 17 - Permitting and Real Estate Summary document attached in the supporting documents.
Construction responsibility	The redacted information is proprietary to the Company, therefore it is privileged and confidential.
Additional 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	$15,805,774.00
Component cost (in-service year)	$16,927,984.00

Congestion Drivers

CD #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
ME-5	314749	6CHARLVL	314772	6PROFFIT	1	230	345	Market Efficiency
ME-7	207950	CUMB TR2	208004	JUNI BU1	1	230	229	Market Efficiency
ME-3	235479	01JUNCTN	235467	01FRNCHM	1	138	201	Market Efficiency

Existing Flowgates

None

New Flowgates

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

Financial Information

Capital spend start date	01/2022
Construction start date	01/2023
Project Duration (In Months)	17

Additional comments

None