

Melbourne Substation Reinforcement

General Information

Proposing entity name	ATSI
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	2026-W1-94
PJM Proposal ID	94
Project title	Melbourne Substation Reinforcement
Project description	The scope includes expanding the 345 kV yard at Melbourne Substation into a twelve-breaker, breaker-and-a-half (BAAH) configuration and expanding the 345 kV yard at Fulton Substation into a nine-breaker, breaker-and-a-half configuration. The existing 9.8-mile Fulton - North Star Steel 345 kV line will be rebuilt as a double-circuit 345 kV transmission line between Melbourne and Fulton substations, providing additional transmission capacity and system redundancy. The existing Allen Junction-Midway 345 kV Line will be cut and looped in and out of the expanded 345 kV yard at Fulton Substation to strengthen the transmission network. The project will also relocate the existing Allen Junction-Fulton 345 kV Line within the new 345 kV yard BAAH configuration. Associated protection and control work includes a comprehensive review and update of terminal and relay settings at Melbourne, Dowling, Fulton, Allen, and Midway substations to ensure proper system coordination and reliable operation following project implementation.
Email	Confidential information
Project in-service date	06/2031
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Proprietary and confidential information.

Project Components

1. Expand 345 kV yard at Melbourne Substation
2. Expand 345 kV yard at Fulton Substation
3. Dowling Substation Update Relay Settings
4. Allen Junction Substation - Add relaying
5. Midway Substation - Add relaying
6. Allen Junction - Fulton 345 kV Line
7. Allen Junction - Midway 345 kV Line
8. Dowling - Melbourne 345 kV Line
9. Fulton - Melbourne No. 1 345 kV Line
10. Fulton - Melbourne No. 2 345 kV Line

Substation Upgrade Component

Component title	Expand 345 kV yard at Melbourne Substation
Project description	Proprietary and confidential information.
Substation name	Melbourne Substation
Substation zone	ATSI
Substation upgrade scope	Expand the 345 kV yard at Melbourne Substation into a twelve-breaker breaker-and-a-half (BAAH) configuration by adding two 345 kV breakers.

Transformer Information

None	
New equipment description	Install two 345 kV breakers rated for 3000 A. Note: Substation will be constructed under supplemental project s2237.2.
Substation assumptions	LON and not CPCN Summer outages are approved Additional 345 kV line under construction is complete prior to this project starting Property is sufficient for additional breakers Existing Project to provide bay to install terminal for new line Available 345 kV breaker slots will be delivered in Q4 2028 Grading activities are started before AG construction Each breaker is commissioned as they are installed

Real-estate description	Customer to provide property; property is assumed to be sufficient for additional breakers.
Construction responsibility	PROPOSER
Benefits/Comments	Proprietary and confidential information.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary and confidential information.
Permitting / routing / siting	Proprietary and confidential information.
ROW / land acquisition	Proprietary and confidential information.
Materials & equipment	Proprietary and confidential information.
Construction & commissioning	Proprietary and confidential information.
Construction management	Proprietary and confidential information.
Overheads & miscellaneous costs	Proprietary and confidential information.
Contingency	Proprietary and confidential information.
Total component cost	\$6,421,816.00
Component cost (in-service year)	\$7,214,407.00
Substation Upgrade Component	
Component title	Expand 345 kV yard at Fulton Substation
Project description	Proprietary and confidential information.
Substation name	Fulton Substation
Substation zone	ATSI
Substation upgrade scope	Expand the 345 kV yard at Fulton Substation to a nine-breaker, breaker-and-a-half yard by adding five 345 kV breakers.
Transformer Information	

None	
New equipment description	Five 345 kV breakers rated for 3000 A.
Substation assumptions	Substation does not require expansion. 345 kV breakers will be delivered in Q4 2028. Only local permits required for substation work.
Real-estate description	Substation does not require expansion.
Construction responsibility	PROPOSER
Benefits/Comments	Proprietary and confidential information.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary and confidential information.
Permitting / routing / siting	Proprietary and confidential information.
ROW / land acquisition	Proprietary and confidential information.
Materials & equipment	Proprietary and confidential information.
Construction & commissioning	Proprietary and confidential information.
Construction management	Proprietary and confidential information.
Overheads & miscellaneous costs	Proprietary and confidential information.
Contingency	Proprietary and confidential information.
Total component cost	\$19,931,426.00
Component cost (in-service year)	\$22,443,725.00
Substation Upgrade Component	
Component title	Dowling Substation Update Relay Settings
Project description	Proprietary and confidential information.
Substation name	Dowling Substation
Substation zone	ATSI

Substation upgrade scope	Update relay settings at Dowling Substation
Transformer Information	
None	
New equipment description	N/A
Substation assumptions	N/A
Real-estate description	N/A
Construction responsibility	PROPOSER
Benefits/Comments	Proprietary and confidential information.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary and confidential information.
Permitting / routing / siting	Proprietary and confidential information.
ROW / land acquisition	Proprietary and confidential information.
Materials & equipment	Proprietary and confidential information.
Construction & commissioning	Proprietary and confidential information.
Construction management	Proprietary and confidential information.
Overheads & miscellaneous costs	Proprietary and confidential information.
Contingency	Proprietary and confidential information.
Total component cost	\$71,332.00
Component cost (in-service year)	\$79,331.00
Substation Upgrade Component	
Component title	Allen Junction Substation - Add relaying
Project description	Proprietary and confidential information.

Substation name	Allen Junction
Substation zone	ATSI
Substation upgrade scope	Add relaying, wave traps, and DDT at Allen Junction Substation
Transformer Information	
None	
New equipment description	Add relaying, wave traps, and DDT at Allen Junction Substation
Substation assumptions	N/A
Real-estate description	N/A
Construction responsibility	PROPOSER
Benefits/Comments	Proprietary and confidential information.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary and confidential information.
Permitting / routing / siting	Proprietary and confidential information.
ROW / land acquisition	Proprietary and confidential information.
Materials & equipment	Proprietary and confidential information.
Construction & commissioning	Proprietary and confidential information.
Construction management	Proprietary and confidential information.
Overheads & miscellaneous costs	Proprietary and confidential information.
Contingency	Proprietary and confidential information.
Total component cost	\$1,795,225.00
Component cost (in-service year)	\$2,024,957.00

Substation Upgrade Component

Component title	Midway Substation - Add relaying
Project description	Proprietary and confidential information.
Substation name	Midway Substation
Substation zone	ATSI
Substation upgrade scope	Add relaying, wave traps, and DDT at Midway Substation
Transformer Information	
None	
New equipment description	Add relaying, wave traps, and DDT at Midway Substation
Substation assumptions	N/A
Real-estate description	N/A
Construction responsibility	PROPOSER
Benefits/Comments	Proprietary and confidential information.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary and confidential information.
Permitting / routing / siting	Proprietary and confidential information.
ROW / land acquisition	Proprietary and confidential information.
Materials & equipment	Proprietary and confidential information.
Construction & commissioning	Proprietary and confidential information.
Construction management	Proprietary and confidential information.
Overheads & miscellaneous costs	Proprietary and confidential information.
Contingency	Proprietary and confidential information.

Total component cost	\$1,201,857.00
Component cost (in-service year)	\$1,351,008.00

Transmission Line Upgrade Component

Component title	Allen Junction - Fulton 345 kV Line	
Project description	Proprietary and confidential information.	
Impacted transmission line	Allen Junction - Fulton 345 kV Line	
Point A	Allen Junction Substation	
Point B	Fulton Substation	
Point C		
Terrain description	Flat	
Existing Line Physical Characteristics		
Operating voltage	345 kV	
Conductor size and type	2 x 954 ACSR 45/7	
Hardware plan description	N/A	
Tower line characteristics	N/A	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1517.000000	1863.000000
Winter (MVA)	1746.000000	2143.000000

Conductor size and type	2 x 954 ACSR 45/7
Shield wire size and type	7 #120 Alumoweld
Rebuild line length	0.1 mile
Rebuild portion description	Reterminate Allen Jct - Fulton 345 kV Line into a new terminal position within Fulton Substation.
Right of way	N/A
Construction responsibility	PROPOSER
Benefits/Comments	Proprietary and confidential information.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary and confidential information.
Permitting / routing / siting	Proprietary and confidential information.
ROW / land acquisition	Proprietary and confidential information.
Materials & equipment	Proprietary and confidential information.
Construction & commissioning	Proprietary and confidential information.
Construction management	Proprietary and confidential information.
Overheads & miscellaneous costs	Proprietary and confidential information.
Contingency	Proprietary and confidential information.
Total component cost	\$2,120,962.00
Component cost (in-service year)	\$2,446,645.00
Transmission Line Upgrade Component	
Component title	Allen Junction - Midway 345 kV Line
Project description	Proprietary and confidential information.
Impacted transmission line	Allen Junction - Midway 345 kV Line

Point A	Allen Junction Substation	
Point B	Midway Substation	
Point C	Fulton Substation	
Terrain description	Flat	
Existing Line Physical Characteristics		
Operating voltage	345 kV	
Conductor size and type	2 x 954 ACSR 45/7	
Hardware plan description	N/A	
Tower line characteristics	N/A	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1542.000000	1878.000000
Winter (MVA)	1746.000000	2143.000000
Conductor size and type	2 x 954 ACSR 45/7	
Shield wire size and type	7 #120 Alumoweld	
Rebuild line length	0.1 mile	
Rebuild portion description	Turn line into substation, approximately one span.	
Right of way	N/A	
Construction responsibility	PROPOSER	

Benefits/Comments	Proprietary and confidential information.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary and confidential information.
Permitting / routing / siting	Proprietary and confidential information.
ROW / land acquisition	Proprietary and confidential information.
Materials & equipment	Proprietary and confidential information.
Construction & commissioning	Proprietary and confidential information.
Construction management	Proprietary and confidential information.
Overheads & miscellaneous costs	Proprietary and confidential information.
Contingency	Proprietary and confidential information.
Total component cost	\$7,267,155.00
Component cost (in-service year)	\$8,103,778.00
Transmission Line Upgrade Component	
Component title	Dowling - Melbourne 345 kV Line
Project description	Proprietary and confidential information.
Impacted transmission line	Dowling - Melbourne 345 kV Line
Point A	Dowling Substation
Point B	Melbourne Substation
Point C	
Terrain description	Flat
Existing Line Physical Characteristics	
Operating voltage	345 kV

Conductor size and type	2 x 954 ACSR 45/7	
Hardware plan description	Single circuit structures will be replaced with double circuit steel monopoles.	
Tower line characteristics	Single circuit structures will be replaced with double circuit steel monopoles.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1216.000000	1308.000000
Winter (MVA)	1355.000000	1428.000000
Conductor size and type	2 x 954 ACSR 45/7	
Shield wire size and type	7 #120 Alumoweld	
Rebuild line length	0.5 miles	
Rebuild portion description	Single circuit steel poles over flat terrain.	
Right of way	Line will be rebuilt on existing ROW.	
Construction responsibility	PROPOSER	
Benefits/Comments	Proprietary and confidential information.	
Component Cost Details - In Current Year \$		
Engineering & design	Proprietary and confidential information.	
Permitting / routing / siting	Proprietary and confidential information.	
ROW / land acquisition	Proprietary and confidential information.	
Materials & equipment	Proprietary and confidential information.	

Construction & commissioning	Proprietary and confidential information.	
Construction management	Proprietary and confidential information.	
Overheads & miscellaneous costs	Proprietary and confidential information.	
Contingency	Proprietary and confidential information.	
Total component cost	\$5,059,456.00	
Component cost (in-service year)	\$5,783,397.00	
Transmission Line Upgrade Component		
Component title	Fulton - Melbourne No. 1 345 kV Line	
Project description	Proprietary and confidential information.	
Impacted transmission line	Fulton - Melbourne No. 1 345 kV Line	
Point A	Fulton Substation	
Point B	Melbourne Substation	
Point C		
Terrain description	Flat	
Existing Line Physical Characteristics		
Operating voltage	345 kV	
Conductor size and type	2 x 954 ACSR 45/7	
Hardware plan description	Double circuit steel poles	
Tower line characteristics	Double circuit steel poles	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	345.000000	345.000000

	Normal ratings	Emergency ratings
Summer (MVA)	1868.000000	2249.000000
Winter (MVA)	2340.000000	2635.000000
Conductor size and type	2 x 945 ACSS 54/7	
Shield wire size and type	7 #120 Alumoweld	
Rebuild line length	9.8 Miles	
Rebuild portion description	Single circuit steel poles over flat terrain.	
Right of way	Line will be rebuilt on existing ROW.	
Construction responsibility	PROPOSER	
Benefits/Comments	Proprietary and confidential information.	
Component Cost Details - In Current Year \$		
Engineering & design	Proprietary and confidential information.	
Permitting / routing / siting	Proprietary and confidential information.	
ROW / land acquisition	Proprietary and confidential information.	
Materials & equipment	Proprietary and confidential information.	
Construction & commissioning	Proprietary and confidential information.	
Construction management	Proprietary and confidential information.	
Overheads & miscellaneous costs	Proprietary and confidential information.	
Contingency	Proprietary and confidential information.	
Total component cost	\$59,081,805.00	
Component cost (in-service year)	\$74,273,951.00	

Greenfield Transmission Line Component

Component title	Fulton - Melbourne No. 2 345 kV Line	
Project description	Proprietary and confidential information.	
Point A	Fulton Substation	
Point B	Melbourne Substation	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	1868.000000	2249.000000
Winter (MVA)	2340.000000	2635.000000
Conductor size and type	2 x 954 ACSS 54/7	
Nominal voltage	AC	
Nominal voltage	345 kV	
Line construction type	Overhead	
General route description	To be facilitated by rebuilding the existing Fulton - North Star Steel (Melbourne) No. 1 345 kV Line	
Terrain description	Flat	
Right-of-way width by segment	Will be using the existing ROW of the Fulton - North Star Steel 345 kV Line	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	N/A	
Environmental impacts	N/A	
Tower characteristics	Double circuit steel poles	
Construction responsibility	PROPOSER	

Benefits/Comments	Proprietary and confidential information.
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary and confidential information.
Permitting / routing / siting	Proprietary and confidential information.
ROW / land acquisition	Proprietary and confidential information.
Materials & equipment	Proprietary and confidential information.
Construction & commissioning	Proprietary and confidential information.
Construction management	Proprietary and confidential information.
Overheads & miscellaneous costs	Proprietary and confidential information.
Contingency	Proprietary and confidential information.
Total component cost	\$12,138,841.00
Component cost (in-service year)	\$13,820,467.00

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
2026W1-ATSI-LOADLOSS1	N/A	N/A	N/A	N/A	N/A	N/A	202	FERC 715	Included
2026W1-ATSI-LOADLOSS2	N/A	N/A	N/A	N/A	N/A	N/A	202	FERC 715	Included

New Flowgates

None

Financial Information

Capital spend start date	04/2027
Construction start date	03/2029
Project Duration (In Months)	50

Cost Containment Commitment

Cost cap (in current year)	\$8,024,071.00
Cost cap (in-service year)	

Components covered by cost containment

1. Expand 345 kV yard at Melbourne Substation - PROPOSER
2. Expand 345 kV yard at Fulton Substation - PROPOSER
3. Dowling Substation Update Relay Settings - PROPOSER
4. Allen Junction Substation - Add relaying - PROPOSER
5. Midway Substation - Add relaying - PROPOSER
6. Allen Junction - Fulton 345 kV Line - PROPOSER
7. Allen Junction - Midway 345 kV Line - PROPOSER
8. Dowling - Melbourne 345 kV Line - PROPOSER
9. Fulton - Melbourne No. 1 345 kV Line - PROPOSER
10. Fulton - Melbourne No. 2 345 kV Line - PROPOSER

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	No
ROW / land acquisition	No
Materials & equipment	No

Construction & commissioning	No
Construction management	No
Overheads & miscellaneous costs	No
Taxes	No
AFUDC	No
Escalation	No
Additional Information	See attached document for details on the cost containment.
Is the proposer offering a binding cap on ROE?	No
Is the proposer offering a Debt to Equity Ratio cap?	No
Additional cost containment measures not covered above	See attached document for details on the cost containment.

Additional Comments

Please contact Larre Hozempa (lhozemp@firstenergycorp.com) or Joe Cassata (jcassata@firstenergycorp.com) with any questions.