Green Chapel-Curleys 345kV Circuit

General Information

Proposing entity name	AEPSCT
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	AEP_W
PJM Proposal ID	354
Project title	Green Chapel-Curleys 345kV Circuit
Project description	Install approximately 5.5 miles of new 345kV line between Curleys and Green Chapel 345kV substations. This circuit will be created by utilizing the double circuit capable structures on the Vassell – Curleys and Vassell – Green Chapel 345kV line assets within the existing ROW by adding the second circuit arms and conductor.
Email	jmperez@aep.com
Project in-service date	04/2030
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	

Project Components

1. Green Chapel-Curleys 345kV Circuit
2. Curleys 345kV Station
3. Green Chapel 345kV Station
4. Corridor-Curleys 345kV Circuit

Transmission Line Upgrade Component

Component title	Green Chapel-Curleys 345kV Circuit
Project description	Install new approximately 5.5 miles of new 345kV line between Curleys and Green Chapel 345kV substations. This circuit will be created by utilizing the soon to be existing double circuit capable structures of Vassell – Curleys line and Vassell – Green Chapel 345kV lines all within the existing ROW.
Impacted transmission line	Green Chapel-Curleys 345kV
Point A	Green Chapel 345kV
Point B	Curleys 345kV
Point C	
Terrain description	Flat/urban.
Existing Line Physical Characteristics	
Operating voltage	345
Conductor size and type	N/A (circuit does not exist today)
Hardware plan description	Hardware along the soon to be existing lines will be reused as appropriate. New hardware to be added to existing structures to establish the second circuit.
Tower line characteristics	Steel Double Circuit Steel Structures.
Proposed Line Characteristics	

	Designed	Operating
Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	3113.000000	3113.000000
Winter (MVA)	3858.000000	3858.000000

Conductor size and type	2-1590 ACSR Falcon
Shield wire size and type	7#8 Alumoweld Shield Wire & OPGW
Rebuild line length	N/A
Rebuild portion description	Approximately 5.5 miles of new conductor will be strung on vacant side of existing structures part of the Vassell-Curleys and Vassell-Green Chapel 345kV circuits.
Right of way	Existing 345kV circuits will have been newly built and thus right of way should be adequate to string this circuit from Curleys to Green Chapel however, it is assumed some easements may need supplemented.
Construction responsibility	AEP
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	Detailed cost breakdown
Permitting / routing / siting	Detailed cost breakdown
ROW / land acquisition	Detailed cost breakdown
Materials & equipment	Detailed cost breakdown
Construction & commissioning	Detailed cost breakdown
Construction management	Detailed cost breakdown
Overheads & miscellaneous costs	Detailed cost breakdown
Contingency	Detailed cost breakdown
Total component cost	$5,375,607.60
Component cost (in-service year)	$5,375,607.60

Substation Upgrade Component

Component title	Curleys 345kV Station

Project description	Install 2-345kV circuit breakers at Curleys to accommodate new 345kV circuit from Curleys to Green Chapel.
Substation name	Curleys
Substation zone	205
Substation upgrade scope	Install 2-345kV circuit breakers at Curleys to accommodate new 345kV circuit from Curleys to Green Chapel.

Transformer Information

None

New equipment description	2-345kV Circuit Breakers, 5000A, 63kA
Substation assumptions	Cable trench will be utilized as is. Control house expansion will be required.
Real-estate description	No fence expansion necessary.
Construction responsibility	AEP
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	Detailed cost breakdown
Permitting / routing / siting	Detailed cost breakdown
ROW / land acquisition	Detailed cost breakdown
Materials & equipment	Detailed cost breakdown
Construction & commissioning	Detailed cost breakdown
Construction management	Detailed cost breakdown
Overheads & miscellaneous costs	Detailed cost breakdown
Contingency	Detailed cost breakdown
Total component cost	$5,450,232.30

Component cost (in-service year)	$5,450,232.30

Substation Upgrade Component

Component title	Green Chapel 345kV Station
Project description	Install 1-345kV circuit breaker at Green Chapel to accommodate new 345kV circuit between Green Chapel and Curleys 345kV stations.
Substation name	Green Chapel 345kV
Substation zone	205
Substation upgrade scope	Install 1-345kV circuit breaker at Green Chapel to accommodate new 345kV circuit between Green Chapel and Curleys 345kV stations.

Transformer Information

None

New equipment description	1-345kV circuit breaker, 5000A, 63kA
Substation assumptions	Assume removed bus support foundations will be removed completely to avoid interference with new breaker. Assume existing shield wire pole will need to be removed as it is located in path of t-line exit. Utilize existing cable trench. Line will exit South going over existing 138kv line exits. Arresters need to be install in future line location to meet minimum separation distance to existing CB “B2” No DICM expansion needed.
Real-estate description	No expansion necessary.
Construction responsibility	AEP
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	Detailed cost breakdown
Permitting / routing / siting	Detailed cost breakdown
ROW / land acquisition	Detailed cost breakdown
Materials & equipment	Detailed cost breakdown

Construction & commissioning	Detailed cost breakdown
Construction management	Detailed cost breakdown
Overheads & miscellaneous costs	Detailed cost breakdown
Contingency	Detailed cost breakdown
Total component cost	$2,807,695.42
Component cost (in-service year)	$2,807,695.42

Transmission Line Upgrade Component

Component title	Corridor-Curleys 345kV Circuit
Project description	Perform sag mitigation on ~4.5 mi Corridor – Curleys 345kV line to bring the rating above 2100 MVA. Approximately 14 structures will be raised to remediate clearance violations and operate at MOT.
Impacted transmission line	Corridor-Curleys 345kV
Point A	Structure 225 of Corridor-Curleys 345kV
Point B	Structure 245 of Corridor-Curleys 345kV
Point C	
Terrain description	Flat/urban.
Existing Line Physical Characteristics	
Operating voltage	345
Conductor size and type	2-1272 KCM ACSR 45/7 (Existing)
Hardware plan description	Hardware will be reused as appropriate.
Tower line characteristics	The existing Corridor-Curleys 345kV circuit consists of single circuit lattice 345kV structures originally built in 1973.
Proposed Line Characteristics	

	Designed	Operating
Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1662.000000	2224.000000
Winter (MVA)	2102.000000	2525.000000
Conductor size and type	2-1272 ACSR 45/7	
Shield wire size and type	Shield wire will not be replaced	
Rebuild line length	N/A	
Rebuild portion description	No rebuild part of this scope. Only raising towers to remediate clearance violations and be able to operate at MOT.	
Right of way	No new right of way is expected to be necessary for this component.	
Construction responsibility	AEP	
Benefits/Comments		
Component Cost Details - In Current Year $		
Engineering & design	Detailed cost breakdown	
Permitting / routing / siting	Detailed cost breakdown	
ROW / land acquisition	Detailed cost breakdown	
Materials & equipment	Detailed cost breakdown	
Construction & commissioning	Detailed cost breakdown	
Construction management	Detailed cost breakdown	
Overheads & miscellaneous costs	Detailed cost breakdown	
Contingency	Detailed cost breakdown	

Total component cost	$2,152,508.40
Component cost (in-service year)	$2,152,508.40

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
2025W1-N11-ST127	290573	05INNOVATION	288789	05INNOVAT2EQ	2	345/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST138	290254	05INNOVATION	290577	05INNOVAT1EQ	1	138/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST128	290254	05INNOVATION	288789	05INNOVAT2EQ	2	138/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST139	290254	05INNOVATION	288789	05INNOVAT2EQ	2	138/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST135	290573	05INNOVATION	288789	05INNOVAT2EQ	2	345/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST129	290573	05INNOVATION	290577	05INNOVAT1EQ	1	345/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST130	290254	05INNOVATION	290577	05INNOVAT1EQ	1	138/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST132	290573	05INNOVATION	290577	05INNOVAT1EQ	1	345/1.0	205	N-1-1 Thermal	Included

New Flowgates

None

Financial Information

Capital spend start date	04/2026
Construction start date	05/2028
Project Duration (In Months)	48

Additional Comments

None