

# Bixby - Buckeye Steel 138 kV Reconfiguration

## 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_I
PJM Proposal ID	276
Project title	Bixby - Buckeye Steel 138 kV Reconfiguration
Project description	The project proposes to reconfigure the Bixby - Buckeye Steel 138 kV line to tie in to the nearby Marion Road Station.
Email	wrburkett@aep.com
Project in-service date	08/2027
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	

## Project Components

1. Bixby - Buckeye Steel 138 kV Cut In Work
2. Marion Road Station Work

### Greenfield Transmission Line Component

Component title	Bixby - Buckeye Steel 138 kV Cut In Work
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Project description	Construct 0.15 miles of 138 kV double circuit line to cut the existing Bixby - Buckeye Steel line into Marion Road station. Relay settings at Bixby and Buckeye Steel will be updated as needed.	
Point A	Bixby	
Point B	Marion Road	
Point C	Buckeye Steel	
	Normal ratings	Emergency ratings
Summer (MVA)	223.000000	310.000000
Winter (MVA)	281.000000	349.000000
Conductor size and type	636 ACSR 26/7 Grosbeak	
Nominal voltage	AC	
Nominal voltage	138	
Line construction type	Overhead	
General route description	The existing Str. 39 will be reused for the cut-in. A new steel monopole structure will be installed at a 15 ft offset from Str. 39. The two structures will act as a 2-pole dead end. The cut-in will use all new 636 ACSR 26/7 Grosbeak conductor and run North from Str. 39 to a new Str. 39A, then Northeast to a new Str. 39B and finally North into Marion Rd station.	
Terrain description	Urban Flat Terrain	
Right-of-way width by segment	This will be a greenfield project for a new 138kV transmission line with a 80' corridor. The new ROW will be 0.15-miles from Str. 39 to Marion Rd station.	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	N/A	
Environmental impacts	This will be a greenfield project for a new 138kV transmission line with an 80' corridor. As this is a new asset, greenfield permits and two Railroad crossing agreements will be obtained. Any additional blowout that may be necessary has not been accounted for as the need has yet to be determined.	

Tower characteristics	A new steel monopole structure will be installed at a 15 ft offset from Str. 39. The two structures will act as a 2-pole dead end. 2-double circuit davit arm structures Str. 39A & 39B will be placed strategically around the water basins and stormwater zone to make connections to the station takeoff structures.
Construction responsibility	AEP
Benefits/Comments	Given the small length of line being added, the new conductor is being sized to match existing conductor on the Bixby - Buckeye 138 kV line.
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	\$1,723,299.12
Component cost (in-service year)	\$1,723,299.12
<b>Substation Upgrade Component</b>	
Component title	Marion Road Station Work
Project description	Work will be performed at Marion Road station in order to electrically terminate the new "cut in" into the existing Bixby - Buckeye Steel 138 kV line.
Substation name	Marion Road
Substation zone	205

Substation upgrade scope	A new 138 kV breaker and associated equipment will be installed at Marion Road station in order to create to terminate the proposed extension from the Bixby - Buckeye Steel 138 kV line.
<b>Transformer Information</b>	
None	
New equipment description	<p>o Install 1 - 138kV breaker (GE, DT1-145FK-63-F1) that will require a large slab foundation and ground connections. Install corresponding jumpers with both sides of the breaker. Breaker will require a CB mounted 88kV MCOV SA (747/747/770/926/926/954 MVA). o Install 2 – 138kV, 3000A, 100kA disconnect switches (ROYAL, AV13830AEP100.G), each switch will require 1 pier foundation and grounding connections with their respective support steel structures. These are to be the set of disconnect switches associated to the line exits. Motor operator will be used for these disconnect switches (822/902/930/1067/1133/1167 MVA). o Install 3 – 138KV bus CCVTs. This will require 1 set of 3 units mounted on steel structure with its corresponding pier foundation. o Install 6-200' of 477 KCM AL wire horizontal strain bus assemblies. This wire is to be from ring bus position monopole between switches (H015C4 &amp; H024T6) to T10 transformer high side monopole (317/355/366/400/423/436 MVA). o Install 9-15' of 477 KCM AL wire. This wire is to be used for the interface between motor operated switches and monopole take-off structure (317/355/366/400/423/436 MVA).</p>
Substation assumptions	Wetland mitigation is not needed. Any and all necessary permitting will be available. This will require long outages. Updated station layout and one-line will be required. Existing T10 connection will be relocated. The substation is crowded so clearances and construction accommodations will be critical. All necessary outages will be available.
Real-estate description	N/A. All work will be performed within the station footprint.
Construction responsibility	AEP
Benefits/Comments	Project assumes completion of the work proposed under s3446 at Marion Road Station.
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	\$2,356,268.12
Component cost (in-service year)	\$2,356,268.12

## 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
2024W1-N11-ST7	243481	05CANAL	243548	05MOUND ST	1	138	205	Summer N-1-1 Thermal	Included
2024W1-N1-ST43	243481	05CANAL	243548	05MOUND ST	1	138/138	205/205	Summer Thermal	Included
2024W1-N11-ST11	243481	05CANAL	243548	05MOUND ST	1	138	205	Summer N-1-1 Thermal	Included
2024W1-GD-S870	243481	05CANAL	243548	05MOUND ST	1	138	205	Summer Gen Deliv	Included
2024W1-N11-ST10	243481	05CANAL	243548	05MOUND ST	1	138	205	Summer N-1-1 Thermal	Included
2024W1-N11-ST8	243481	05CANAL	243548	05MOUND ST	1	138	205	Summer N-1-1 Thermal	Included

## New Flowgates

None

## Financial Information

Capital spend start date	01/2025
Construction start date	12/2026
Project Duration (In Months)	31

## Additional Comments

None