

North Woodcock-East Leipsic 69 kV Line

General Information

Proposing entity name	AEPSCT
Company proposal ID	AEP_L
PJM Proposal ID	602
Project title	North Woodcock-East Leipsic 69 kV Line
Project description	AEP proposes the construction of ~6.65 miles of new 69 kV line between Crawfish College and East Leipsic station and retirement of ~2.3 miles of existing line between Crawfish College and East Ottawa in order to establish a new 69 kV circuit between East Leipsic and North Woodcock stations. Additionally, AEP proposes a rebuild of approximately 9.9 miles of existing 69 kV line between North Woodcock and Pandora stations and between East Lima and Cairo stations. Remote end work at East Leipsic, East Ottawa, and East Lima stations will be required to upgrade relaying and protection to accommodate the proposed circuit changes. Proposed branch ratings: 242993 to 245792: 130/130/130/130 245730 to 245740: 68/71/71/71 245763 to 245766: 82/90/107/113 245763 to 245778: 82/90/107/113 245735 to 245792: 102/142/129/160
Project in-service date	06/2025
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Proposal will address significant sections of 1950's and 1960's wood pole lines in the area. The 1959 vintage 138/69 kV transformer at East Leipsic will be replaced. Disimilar zones of protection concerns will also be addressed by station work at East Lima and East Leipsic station.

Project Components

1. East Leipsic Station Work
2. East Ottawa Breaker Retirement
3. East Lima Breaker Installation

4. North Woodcock-Pandora Line Rebuild
5. Crawfish College-East Ottawa Line Retirement
6. East Lima-Cairo Line Rebuild
7. Crawfish College-East Leipsic 69 kV Line

Substation Upgrade Component

Component title	East Leipsic Station Work
Substation name	East Leipsic
Substation zone	205 - AEP
Substation upgrade scope	This scope involves expanding the existing 69kV portion of the yard to the south. In the expansion area a new 69kV box bay will be installed along with 2 new 69kV circuit breakers and a 69kV capacitor bank. The 138kV yard will have replacements of the existing transformer #3 and existing capacitor bank; these items will be replaced in place.

Transformer Information

	Name	Capacity (MVA)	
Transformer	East Leipsic Transformer #3	130	
	High Side	Low Side	Tertiary
Voltage (kV)	138	69	
New equipment description	Qty. 1 – 138/69kV 130MVA transformer Qty. 2 – 69kV, 3000A, 40kA circuit breakers Qty. 6 – 69kV, 3000A disconnect switches Qty. 1 – 69kV, 28.7MVAR capacitor bank Qty. 1 – 69kV, 600A capacitor circuit switcher Qty. 1 – 138kV 57.6MVAR capacitor bank Qty. 1 – 138kV 3000A, 40kA capacitor circuit breaker		
Substation assumptions	Expansion area property is able to be obtained.		
Real-estate description	Property is customer owned and will need to be acquired.		
Construction responsibility	AEP		
Additional 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	\$4,760,451.80
Component cost (in-service year)	\$.00

Substation Upgrade Component

Component title	East Ottawa Breaker Retirement
Substation name	East Ottawa
Substation zone	205 - AEP
Substation upgrade scope	Retire CB L and associated disconnect switches.

Transformer Information

None	
New equipment description	No new equipment required.
Substation assumptions	N/A
Real-estate description	N/A
Construction responsibility	AEP

Additional 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	\$12,112.10
Component cost (in-service year)	\$.00

Substation Upgrade Component

Component title	East Lima Breaker Installation
Substation name	East Lima
Substation zone	205 - AEP
Substation upgrade scope	This scope involves adding sectionalizing to the high and low side of T3. One high side 138kV circuit breaker and one low side 69kV circuit breaker will be installed.

Transformer Information

None	
New equipment description	Qty. 1 – 138kV, 3000A, 40kA circuit breaker Qty. 1 – 138kV, 2000A disconnect switch Qty. 1 – 69kV, 3000A, 40kA circuit breaker Qty. 1 – 69kV, 2000A disconnect switch
Substation assumptions	Required outages can be obtained Existing grounding at East Lima is adequate.

Real-estate description	N/A
Construction responsibility	AEP
Additional 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	\$1,203,645.30
Component cost (in-service year)	\$.00

Transmission Line Upgrade Component

Component title	North Woodcock-Pandora Line Rebuild
Impacted transmission line	North Woodcock-Pandora 69 kV Line
Point A	North Woodcock
Point B	North Bluffton
Point C	Pandora
Terrain description	Flat, rural

Existing Line Physical Characteristics

Operating voltage	69
Conductor size and type	336 ACSR
Hardware plan description	N/A. Hardware to be replaced
Tower line characteristics	1960s Wood poles, mostly cross arm construction.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	69.000000	69.000000
	Normal ratings	Emergency ratings
Summer (MVA)	102.000000	142.000000
Winter (MVA)	129.000000	160.000000
Conductor size and type	556.5 KCM ACSR (26/7) "Dove"	
Shield wire size and type	7#10 AW	
Rebuild line length	6.3 miles	
Rebuild portion description	Rebuild from North Woodcock Station to Pandora Station, approximately 6.3 miles, with 556 ACSR conductor along the existing center line.	

Right of way

This project addressed the rebuild of the existing North Woodcock – North Bluffton 69kV transmission line and the North Bluffton - Pandora 69 kV line. Additional right-of-way acquisition is not expected to support the centerline rebuild solution. Existing easements in place for the transmission line, along with a clearly maintained existing line corridor, provide a rebuild solution without additional property right acquisition. The project rebuild will begin at the existing North Woodcock Station, and will run in a general northwestern direction to the existing Pandora Station. Aside from anticipated labor associated with completing all necessary right-of-way construction support and non-environmental permitting work, no additional action is anticipated as part of this project at this time. This existing transmission line spans between Allen County, Putnam County and Hancock County, in northwest Ohio. A review of existing easements held provides a solution that does not necessitate additional right-of-way acquisition. Right-of-way will primarily support construction support efforts crossing approximately 52 parcels. A tabletop analysis found there were two (2) parcels that are publicly-owned by the Village of Pandora. At this time, the presumption is that the rebuild of the existing facility is possible under existing easement rights. Land use types within the project footprint are predominantly agricultural, with a small number of residential properties identified through Allen County, Putnam County, and Hancock County online property information listings.

Construction responsibility

AEP

Additional comments

Business confidential information

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

\$7,419,957.31

Component cost (in-service year)

\$.00

Transmission Line Upgrade Component

Component title	Crawfish College-East Ottawa Line Retirement
Impacted transmission line	Crawfish College-East Ottawa 69 kV Line
Point A	Crawfish College
Point B	East Ottawa
Point C	
Terrain description	Flat/rural

Existing Line Physical Characteristics

Operating voltage	69
Conductor size and type	336 ACSR
Hardware plan description	Line to be retired
Tower line characteristics	1960s Wood poles, mostly cross arm construction.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	69.000000	69.000000
	Normal ratings	Emergency ratings
Summer (MVA)	0.000000	0.000000
Winter (MVA)	0.000000	0.000000
Conductor size and type	N/A	
Shield wire size and type	N/A	
Rebuild line length	2.3 miles	

Rebuild portion description	Existing line will be retired, approximately 2.3 miles.
Right of way	N/A
Construction responsibility	AEP
Additional 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	\$327,151.00
Component cost (in-service year)	\$.00

Transmission Line Upgrade Component

Component title	East Lima-Cairo Line Rebuild
Impacted transmission line	East Lima-Cairo 69 kV Line
Point A	East Lima
Point B	Cairo
Point C	
Terrain description	Flat/Rural

Existing Line Physical Characteristics

Operating voltage	69
Conductor size and type	4/0 ACSR 6/1 "Penguin"
Hardware plan description	Hardware to be replaced
Tower line characteristics	1960s Wood poles, mostly cross arm construction.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	69.000000	69.000000
	Normal ratings	Emergency ratings
Summer (MVA)	102.000000	142.000000
Winter (MVA)	129.000000	160.000000
Conductor size and type	556.5 KCM ACSR (26/7) "Dove"	
Shield wire size and type	7#10 AW	
Rebuild line length	3.5 miles	
Rebuild portion description	Rebuild from structure 38 on the East Lima - Cairo line up to Cairo Station, approximately 3.5 miles. The remainder of the line will remain as-is.	

Right of way	This project addresses the rebuild of the existing East Lima - Cairo 69kV transmission line. Minimal right-of-way acquisition is expected to support the centerline rebuild solution. Existing easements in place for the transmission line, along with a clearly maintained existing line corridor, provide a rebuild solution that primarily leverages these existing rights. Additional easement rights will be taken to address a slight route adjustment as the transmission line crosses U.S. Highway 30. The project rebuild will begin at the existing East Lima Station site, and run in a general northern direction to the existing Cairo Station. Aside from anticipated labor associated with completing all necessary right-of-way acquisition support and non-environmental permitting work, no additional action is anticipated as part of this project at this time. This existing transmission line is located in Allen County, Ohio. A review of existing easements held enables a solution that minimizes additional right-of-way acquisition. Right-of-way will acquisition will be necessary for approximately five (5) parcels. A tabletop analysis found there were no publicly-owned parcels crossed as part of this project (aside from Ohio Department of Transportation road right-of-way for U.S. Highway 30). Land use types within the project footprint are primarily agricultural, with some residential properties also impacted, as identified through Allen County online property information listings.
Construction responsibility	AEP
Additional comments	Business confidential information
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	\$5,044,172.77
Component cost (in-service year)	\$.00

Civil infrastructure/major waterway facility crossing plan	None
Environmental impacts	No significant environmental impacts expected. Line route to follow county road 5. Environmental wetland delineation to be conducted during scoping to reduce impacts.
Tower characteristics	Steel single circuit monopoles.
Construction responsibility	AEP
Additional 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	\$7,162,966.51
Component cost (in-service year)	\$.00

Congestion Drivers

None

Existing Flowgates

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
AEP-T63	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T70	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T71	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T72	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T73	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T66	245792	05E.LEIPSC	245810	05NLEIP SW	1	69	205	FERC 715 Thermal
AEP-T67	242993	05E.LEIPSIC2	245792	05E.LEIPSC	1	138/69	205	FERC 715 Thermal
AEP-T64	245805	05LEIPSIC	245806	05DSCHLERT	1	69	205	FERC 715 Thermal
AEP-T65	245806	05DSCHLERT	245810	05NLEIP SW	1	69	205	FERC 715 Thermal
AEP-T68	245757	05MCCOMB OP	245770	05NEW LIBR	1	35	205	FERC 715 Thermal
AEP-T69	245730	05CAIRO	245740	05E LIMA	1	69	205	FERC 715 Thermal

New Flowgates

None

Financial Information

Capital spend start date 03/2021

Construction start date 09/2023

Project Duration (In Months) 51

Additional comments

None