Cabell Station Expansion and Cut In

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_C
PJM Proposal ID	336
Project title	Cabell Station Expansion and Cut In
Project description	Construct a new 138 kV in/out line to Cabell 138 kV station from the existing Balls Gap - West Huntington 138 kV line. Expand the existing Cabell 138 kV station and install six 138 kV breakers in a ring configuration. Update remote end relay settings at Balls Gap and West Huntington stations. Replace relay package at Darrah and Milton stations.
Email	nckoehler@aep.com
Project in-service date	06/2026
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	

Project Components

1. Cabell Line Extension
2. Cabell Station Expansion and Remote End Relays

Greenfield Transmission Line Component

Component title	Cabell Line Extension	
Project description	Reconfigure the existing Cabell tap point at structure #209-128 on the existing Balls Gap-West Huntington 138 kV line and bring a second circuit into Cabell Station by constructing approximately 1.15 miles of new double circuit line. Ratings are limited by existing equipment on the Balls Gap-West Huntington line.	
Point A	Park Hill	
Point B	Cabell	
Point C	Hash Ridge	
	Normal ratings	**Emergency ratings**
Summer (MVA)	146.000000	167.000000
Winter (MVA)	184.000000	210.000000
Conductor size and type	1033 ACSR 54/7 Curlew	
Nominal voltage	AC	
Nominal voltage	138	
Line construction type	Overhead	
General route description	The line will parallel the existing 0.75 mile tap into Cabell and use double circuit towers with long span construction to bring the circuits in/out of Cabell Station.	
Terrain description	This line traverses extreme mountainous terrain.	
Right-of-way width by segment	The project will procure new 100' ROW for 0.75 miles beginning near structure #209-128 in Cabell County, WV, and traverse NE parallel to AEP's existing ROW and ending at Cabell Station. The tabletop analysis found the private land use is predominantly agricultural, residential & commercial as verified through the Cabell Co. Clerk’s Offices classifications/assessments. The private land requirements include expanding the existing the ROW to 100’ (50’/50’) wide ROW in Cabell Co., WV where the land use is predominantly agricultural, residential & vacate/miscellaneous.	
Electrical transmission infrastructure crossings	None	
Civil infrastructure/major waterway facility crossing plan	N/A	

Environmental impacts	Surveys for protected species and cultural resources will be conducted. A SWPPP permit will be required, and as with all construction in mountainous terrain, proper E&S controls will be required along the line route and access roads.
Tower characteristics	This line will utilize lattice double circuit towers on grillage foundations. These circuits are in a vertical configuration.
Construction responsibility	AEP
Benefits/Comments	Business confidential practices.

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	$5,284,129.00
Component cost (in-service year)	$.00

Substation Upgrade Component

Component title	Cabell Station Expansion and Remote End Relays
Project description	Expand Cabell station to accommodate new line cut in. Scope includes remote end changes at Darrah, Milton, Balls Gap, and West Huntington station to coordinate relays.
Substation name	Cabell
Substation zone	205 - AEP

Substation upgrade scope	Replace existing 138kV Bus 1 & 2 with a 6 Breaker Ring Bus. Use a custom Studebaker structure to minimize the footprint of the new ring. Install retaining walls towards the south and west. Purchase some south of existing property line to make room for new ring and retaining wall. Remove Phase over Phase H-Frame outside the station fence. Install new Drop In Control Module (DICM) with 125VDC batteries. Convert existing MOABs and 12kV breakers from 48VDC to 125VDC. The new DICM will contain 4 line relay panels with DCB, two bus differential panels, and 3 breaker control panels containing 6 breaker control plates, one RTU panel, and one telecom panel. The 4 lines that would be connected to Cabell station will need to have 4 separate line frequencies. Replace (2) tuner packs on existing line traps at 2 stations (Darrah or Milton, and Balls Gap or West Huntington). At Darrah, install one DCB line relay panel and one breaker control panel. At Milton, install one DCB line relay panel. At Balls Gap, update relay setting. At West Huntington, update relay setting.

Transformer Information

None

New equipment description	(6) 138kV/3000A/40kA breakers, (6) Studebaker structures for ring bus, (4) line rated 138kV/3000A MOABs, (12) breaker GOABs, (18) CCVTs for line/bus relaying, (4) line traps, 1272KCM AAC, and 3" IPS Aluminum tubing. New 16' x 27' DICM. (4) new DCB line relay panels. (6) breaker control plates in 3 panels. (2) bus differential panels. (1) RTU panel. (1) Telecom panel. (2) new tuner packs for line traps. (2) new DCB line relay panels. (1) breaker control panel.
Substation assumptions	Existing H-Frames along with the Distribution MOABs and Circuit Switchers will be reused to connect to new ring bus. Remove existing shield wire pole to make room for Studebaker ring. Pilot over T-Line will be used instead of OPGW.
Real-estate description	The existing Cabell Station will be expanded to the south of the existing station sited on David Creek Road (Highway 10), 0.65 of a mile south of its intersection with US Highway 60 in the town of Pea Ridge, Cabell County, West Virginia on commercial lands. The tabletop analysis found there were no public lands required for this Project. The private land use is commercial as tabletop analysis found and was verified through the Cabell County Clerk’s Office classification/assessment. The private land requirements include approximately 0.25 acres for the existing station expansion. The total Project acreage is 0.25 acres to be purchased in fee. Station expansion site was chosen for its proximity to the existing station.
Construction responsibility	AEP
Benefits/Comments	Business confidential practices.

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	$8,399,949.00
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	Status
AEP -T9	244715	05HURRICAN	244722	05MILTON	1	69	205	FERC 715 Thermal	Included
AEP -T10	244715	05HURRICAN	244732	05TEAYS	1	69	205	FERC 715 Thermal	Included
AEP -T11	244715	05HURRICAN	244732	05TEAYS	1	69	205	FERC 715 Thermal	Included
AEP -T12	244732	05TEAYS	247774	05PUTNAM VLG	1	69	205	FERC 715 Thermal	Included
AEP -T14	244873	05WINFIELD	247774	05PUTNAM VLG	1	69	205	FERC 715 Thermal	Included
AEP -T13	244863	05BANCROFT	244873	05WINFIELD	1	69	205	FERC 715 Thermal	Included

New Flowgates

None

Financial Information

Capital spend start date	10/2022
Construction start date	10/2024
Project Duration (In Months)	44

Additional Comments

None